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Which Works Better: Worked Examples or Hint Messages?

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Which Works Better: Worked Examples or Hint Messages?

An Interactive Qualifying Project Report

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Degree of Bachelor of Science

By

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ABSTRACT

This Interactive Qualifying Project was designed to determine whether there is overall learning from electronic tutoring and which of the two electronic teaching mechanisms (hint messages and worked examples) yields the better result in terms of students learning. We performed a study using the Assistment system and special problems developed for this system. Our participants were 763 students from 8 middle schools in the Worcester, MA area.

ACKNOWLEDGEMENTS

We would like to thank our advisor Neil Heffernan for guiding us through the difficulties of statistical analysis. This project would not be possible without Cristina Heffernan's help who has provided enormous amounts of feedback on every question regarding content building we had. We would also like to recognize Leena Razzaq and other members of the Tutor Research Group at WPI for advice regarding technical aspects of the Assistment system and help with setting up the experiment.

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4. INTRODUCTION

The Assistment system is a project developed by Worcester Polytechnic Institute in collaboration with Carnegie Mellon University. Assistment is being built to identify the difficulties individual students – and the class as a whole – are having. It is intended that teachers will be able to use this detailed feedback to tailor their instruction to focus on the particular difficulties identified by the system. Unlike other assessment systems, the Assistment technology also provides students with intelligent tutoring assistance while the assessment information is being collected.*

In this paper, we will present the problems we built, working with the newest generation of the system. Furthermore, we will analyze the results of the study we prepared for the students in middle school. The following curriculums that have been used for this task are *Moving Straight Ahead* and *Stretching and Shrinking*. The study has the purpose of determining which problems have enabled a student to learn from: the ones with hints or the exercises that showed a similar, worked example.

To provide more detail, we created in total four Assistments for each problem: two with hints and two with worked examples. The content of each problem had the same principle with only the context being changed. Our analysis on each curriculum will provide a strong base from which future studies could benefit.

5. BACKGROUND INFORMATION

5.1. Assistment system

The computer science department of Worcester Polytechnic Institute (WPI) in collaboration with other specialists in various areas from WPI and Carnegie Mellon is working on a system that helps students learn Math using electronic technology. The system is called Assistment and consists of three major parts. The first part lets teachers, college students and other interested parties log in and develop content to be used in classes in the form of questions that have answers and, possibly, some kind of help mechanism to guide the student towards solution (for example, hints). The second part is designed for teachers to monitor class performance, the performance of each student in class and assign sets of problems to classes. The last part allows students to log in and attempt to complete assigned sets of problems, see feedback and learn by retrieving hints and possibly seeing scaffoldings. Our group was one of the first ones to experience the new system rewritten in Ruby. From what we understand, the first part of the system (called "builder") became more intuitive and easier to use with this release. The process of uploading images turned into a more simple and straightforward one. It now became possible to copy and paste the material of problems directly from Microsoft Word to the Assistment while working on problems using Internet Explorer.

Massachusetts Comprehensive Assessment System (MCAS) is the basis for the Assistment content being developed. Having a real test such as MCAS is a good way to monitor the students progress and compare various data to the averages and other information from the entire state of Massachusetts.

5.2. School Visits

We were given the opportunity to observe the Assistment system being used in the actual school environment by real students. Our group has made several trips to Burncoat Middle School, where we could pay close attention to the particularities of completing our electronic assignments. The students were familiar with the procedure and had personal accounts as well as previous experience with Assistment. The teacher lead the class and told the instructions to complete specific problem sets. Once a week, the students had a dedicated class to work with Math problems from the current topic of the curriculum using Assistment problem sets that we designed and implemented. We were available for the teacher and students to ask any questions regarding the content of the problems and the usage of the system. As the period went on, we engaged in conversations with the students and helped them throughout the duration of class. This section is a summary of our observations during the visits and our thoughts regarding these observations.

As with any testing involving numerous participants, our time at Burncoat Middle School revealed several defects in the content of the Assistment assignments that the students worked on. We were satisfied with the thorough testing by the smaller group of students. It helped us eliminate the unnecessary confusion in the future, when we would have a lot more data from other classes and other schools to analyze. The absence of hidden typos and content-sensitive errors would make our results cleaner, and thus our conclusions would be more reliable and confident. We also had the chance to talk to the students and identify differences between the terminology that we used in our assignments and the one that the students were used to. This interaction definitely helped us improve our wording to target the very knowledge of the material, rather than having the students figure out what exactly is asked in the problems. We also could see that some students had

problems logging in to the system. This observation helped us interpret the results we obtained later much easier. We could see that unsuccessful log-in attempts correlate with entries only with student ID and no answers recorded which should be ignored for the purposes of our analysis.

6. LITERATURE REVIEW

6.1. Study Island

One of the educational computer systems similar to Assistment available on the market is Study Island. Both systems have similar features, but there are some substantial differences as well.

To begin with, Assistment is a project run by several educational institutions and sponsored by grants, whereas Study Island is a commercial project. This difference leads to multiple variations in various aspects such as who builds the content and what kind of interface should be used.

Both systems are designed to tutor students, and there is a feature to test the knowledge. Assistment is designed primarily for students and teachers to work with Math problems. Study Island creators brought the ability to acquire knowledge and be tested on many subjects – Math, Language Arts, Science, and Social Science. Even though Assistment offers an engine that can be employed to develop content in any area, it was designed with Math application in mind and is mostly used for Math-related problems.

Both Assistment and Study Island require Internet connection for operation. The web-based approach allows for faster online content distribution (as opposed to offline distribution, for example using Compact Disks) and for data to be collected and analyzed.

One of the greatest advantages that Assistment has and its competitors do not is that it enables teachers and other interested parties to add content. Ideally, a teacher would need to be able to browse through some pre-defined set of problems and choose the relevant ones, but if such are not available, the teacher can write additional content using Assistment's easy-to-use web-based interface. The system can be potentially used for teaching and testing on any subject. At the moment, most of the content consists of Math

problems which are used to a great extent at Worcester county schools. In Study Island, there is no option for teachers to add more problems to the database. Instead, they have developed a vast number of problems on different topics in different areas. The built content is truly enormous and covers practically all the standardized tests in Math, Language arts, Science, and Social Science throughout the country. In particular, the system covers the material used in Massachusetts Comprehensive Assessment System (MCAS) test in grades 2 through 8.

In terms of interfaces, Study Island provides the opportunity to choose from test mode and game mode. In the traditional test mode, the student should simply select a right answer from the given set, just like one would do on paper during an in-class assignment. As we can see on Figure 2A, the choices presented are in color which is supposed to help students to distinguish the choices more clearly. The game mode brings colorful animated flash cartoons that students might be more likely to enjoy, and their experience of retaining information might become more pleasurable. For instance, Figure 2B shows a sample problem with the bowling game presenting possible answers. Assistment has only one mode that takes answers in more or less traditional way through multiple choice questions and fill-in blanks. In Figure 1A we see an example of a problem the answer for which should be filled in.

It is important to remember that the two systems described have similar capabilities, though they came from different environments: Assistment being an undertaking in academics and Study Island being a commercial product. A brief summary of noticeable similarities and differences is provided in Table1.

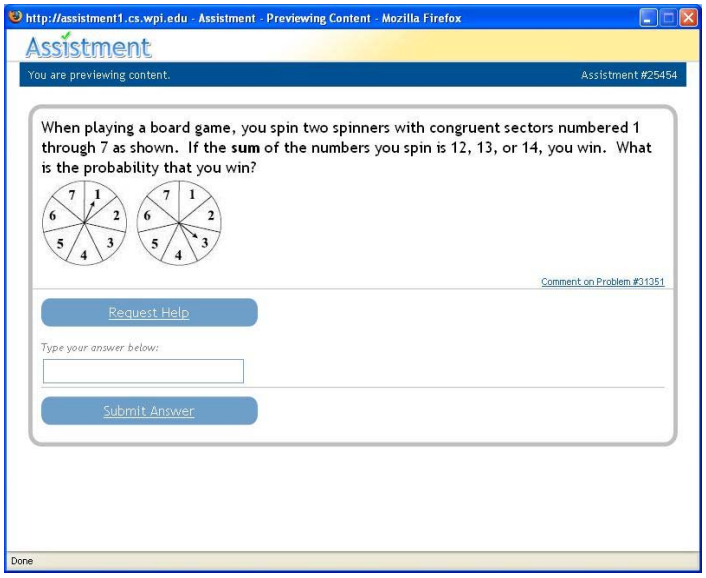


Figure1. Standard Interface that Assistment uses.

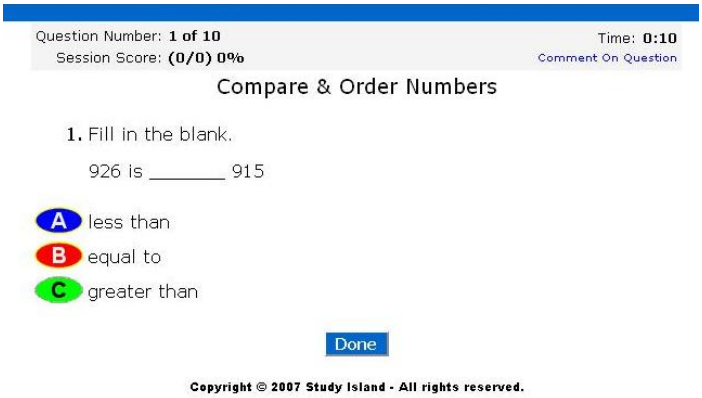


Figure 2A. Test Mode that Study Island uses.

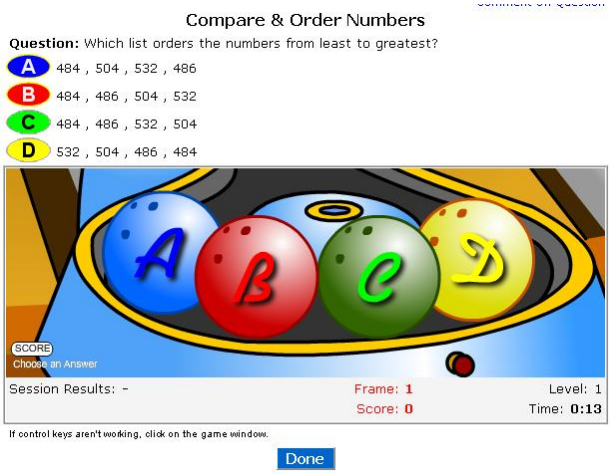


Figure 2B. Game Mode that Study Island uses.

Table 1. Comparison of the features that Assistment has versus those of Study Island.

	Assistment	**Study Island**
Subject	Math	Math, Language arts, Science, Social Science
Technology	Web-based	Web-based
Content	Teachers can build content	Content is pre-defined
Interface	Classical Test Interface	Test Mode, Game Mode
Finance	Sponsored by grants	Needs to be purchased by parents and schools

6.2. MasteringPhysics

A lot of eLearning solutions currently exist on the market, that have the same goal as the Assistment project: to provide a friendly, helpful and interactive tutoring environment. One such system is called MasteringPhysics.

Developed by Pearson Education, MasteringPhysics is part of a line of web-based tutoring products, including subjects like: physics, astronomy, chemistry and biology. I will compare the two tools, Assistment and MasteringPhysics, to highlight the similarities and the differences that set each other apart.

Firstly, MasteringPhysics is aimed mostly for college-level students (Figure 1), whereas the Assistment project was focused primarily at primary, middle school pupils, having as an objective extending beyond that, including the whole K-12 education and more. Not only is the grade range expanding, but also the subjects. Although the content now is mostly comprised of mathematics problems, science Assistments are being integrated into the system to offer an interactive interface for better practical learning in a virtual world.

Secondly, the project developed by Worcester Polytechnic Institute, in cooperation with Carnegie Mellon University, is being funded by grants. On the opposite side, MasteringPhysics is a commercial product that bears the mark of Pearson Education. To gain access to its tools, students must purchase codes, either online or by acquiring them bundled with their respective book.

Going back to the content side, the Assistment infrastructure enables the teacher or any content developer to create, using a friendly interface, new problems, assignments or organize them in sequences or sets. The only requirements are a compatible web browser and creativity. Nonetheless, adding new content to MasteringPhysics is a little trickier. For starters, you can create exercises only on Windows-based operating systems. Mac or Linux

users would have to install separate emulators that mimic the Windows environment. In addition, the developer would need to know how to use the XML language and, to top it off, a high-speed internet connection is mandatory, as dial-up Internet cannot withstand such a task. This list of necessary items may impede a user from creating new content due to a higher knowledge of computer skills.

Next, I will talk about the differences in the way the problems are shown and the methods that are used to tutor a student in understanding them. In the MasteringPhysics tutor, all the problems in the assignment are shown (sometimes a portion of the problems are hidden until solving certain ones). If the student cannot figure out the right answer, he/she can request hints (if available), which will trigger another window to open. It will contain a list of necessary steps to solving the problem and they may ask other questions related to the task at hand. I found this technique, of switching back and forth between windows (also because of the fact that the hints window does not include the image of the problem or does not let you input the final answer) a little frustrating (Figure 2). Moreover, the load times for the tutor and submitting answers are generally high, but I will talk about those in the next paragraph. The interface of the Assistment has a definite advantage in this sector. Hints and scaffolding questions are displayed on the same windows, presented in a logical flow. If the student didn't answer correctly, he/she can check hints or go automatically to helping questions (Figure 3).

In terms of performance, the Assistment project is well placed among its competitors. Its algorithms to download the content onto the student's computer are efficient: after the first problem has been received (along with its hints, if applicable), the user can start the set of Assistments, while the rest of the set is being downloaded seamlessly. Once clicked the assignment, it takes less than 141 milliseconds before the student can tackle the first exercise. MasteringPhysics does not catch up very well in this area. Due to its structure, the whole assignment must be downloaded and presented in one

page, taking more than 2.5 seconds, on average (Figure 4). In addition, asking for hints prolongs the time for waiting, as they are treated separately from the rest of the problems.

Lastly, I want to write about the orientation of the two tutors. MasteringPhysics has been developed more for homework and exams, while Assistment is well suited for not only both homework and exams, but also for in-class exercises or lab periods.

Figure 3 – Main webpage of MasteringPhysics

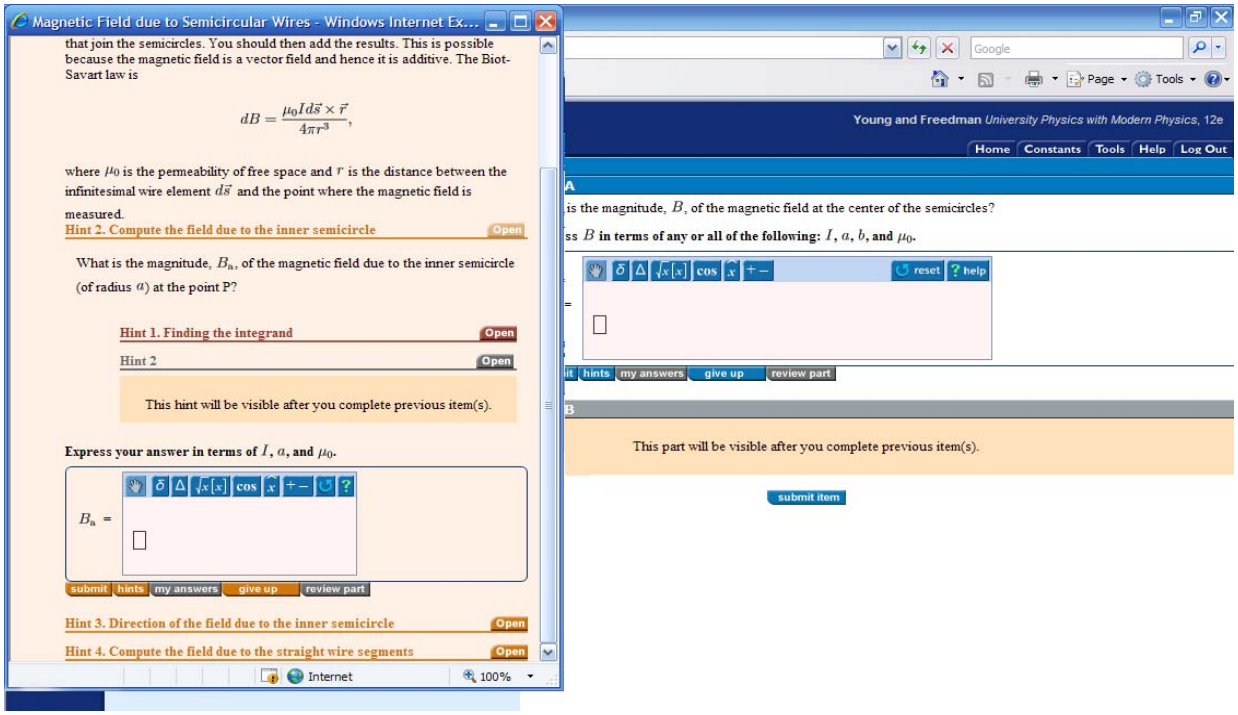


Figure 4 – An assignment page with a pop-up for hints on MP

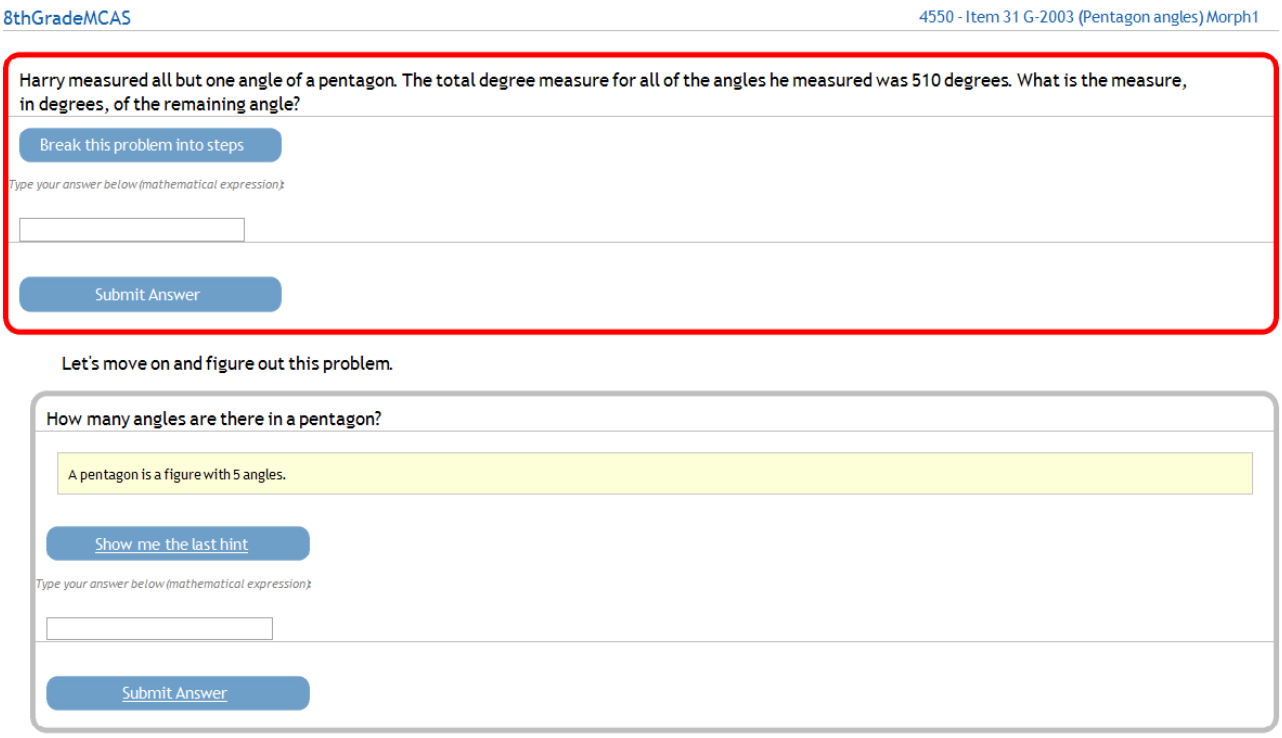


Figure 5 – ASSISTment assignment layout showing a problem (red), a scaffold question and a hint

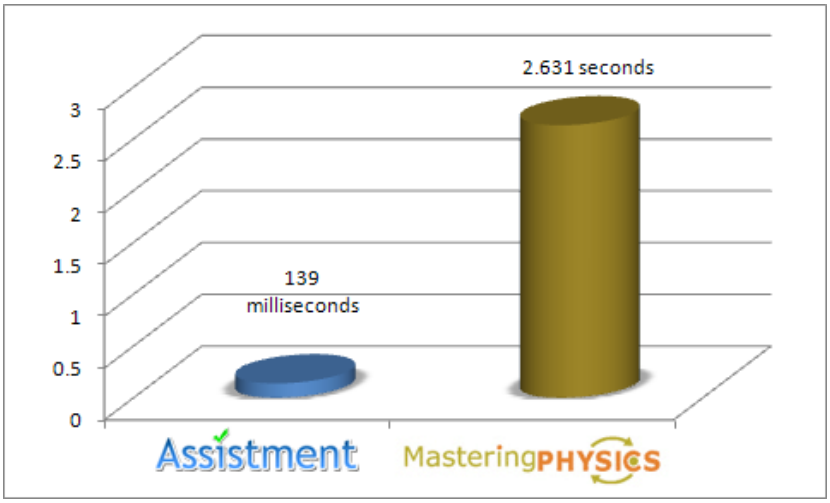


Figure 6 – Average load time before the student can start work

6.3. WebWork

WebWork is another online tutoring system, which was originally developed in 1995 by Prof. Arnold Pizer and Prof. Michael Gage at the University of Rochester. This gave WebWork many years to grow to its contemporary size – a library of over 2000 "canned" problems organized into 183 problem sets, which are available to the general public free of charge.

Figure 7 - The WebWork Interface

When comparing Assistment to WebWork, they seem similar – online tutoring systems created to evaluate students, and help them practice class material simultaneously, without the teacher to have to spend time with them. But if some aspects of the two systems were observed in detail, notable differences could be found.

When availability is considered, both systems are open to the general public. The difference, which appears, is in the way they are made available. While Assistment works on a single server, managed by the development team for the project, WebWork simply provides the system administrator of a facility with a library to use and build off of. The system administrator is expected to create and manage a server on his own. This will prove to be a problem for facilities, which do not have servers of their own, or have insufficient funds to support a well qualified system administrator. On the other hand, if these problems do not occur, having WebWork running on a separate server for the specific facility proves to be much more efficient than having one server running the system for all potential facilities, which would like to be using it.

Another aspect of both systems, which is very different, is the way they're being developed today. While Assistment has a team of people, who dedicatedly work on developing its features, WebWork is an open source library, which can be modified by anyone willing to contribute as long as the determined standards for the files are followed. This provides Assistment with a much more steady development rate, but also - fewer contributors. WebWork, on the other hand, will have many people working on it, but their motivation, submission rate, and development speed will vary highly. The library that WebWork provides though, gives an enormous variety of movies.

When flexibility is considered though, WebWork proves to be better than Assistment. WebWork is based on a variety of languages, using the best of each, to create a very flexible design for the whole system, while Assistment has not developed to that level, simply because it has not been necessary. Also WebWork allows direct manipulation of PERL code for creating a new or editing an already existing problem to what is necessary.

But this gives Assistment the upper hand when it comes to ease of use. There exists a nice graphic interface which hides all the code from the creator of problems. On the other hand, WebWork requires some programming skills and understanding.

Another important aspect which both systems differ in is functionality. While WebWork creates an individualized problem for each student, calling a random number generator used within the form of the problem itself, Assistment gives the exact same problem for every student. The fact that all students will get the same answer in the end will tend to lead them towards cheating, rather than having each student have a different problem, but use the same form of the solution as an answer.

Regarding checking answers, again a difference occurs. While Assistment can compare the entered open-end-question answer to the one predefined, WebWork takes both functions and compares a certain number of points generated by them, rather than comparing the functions themselves to make sure it's making the right decision. On the other hand WebWork does not allow specific error messages to occur when an incorrect answer is entered, so the students don't get a clear idea whether they're on the right path and making silly mistakes, or actually very confused about the material.

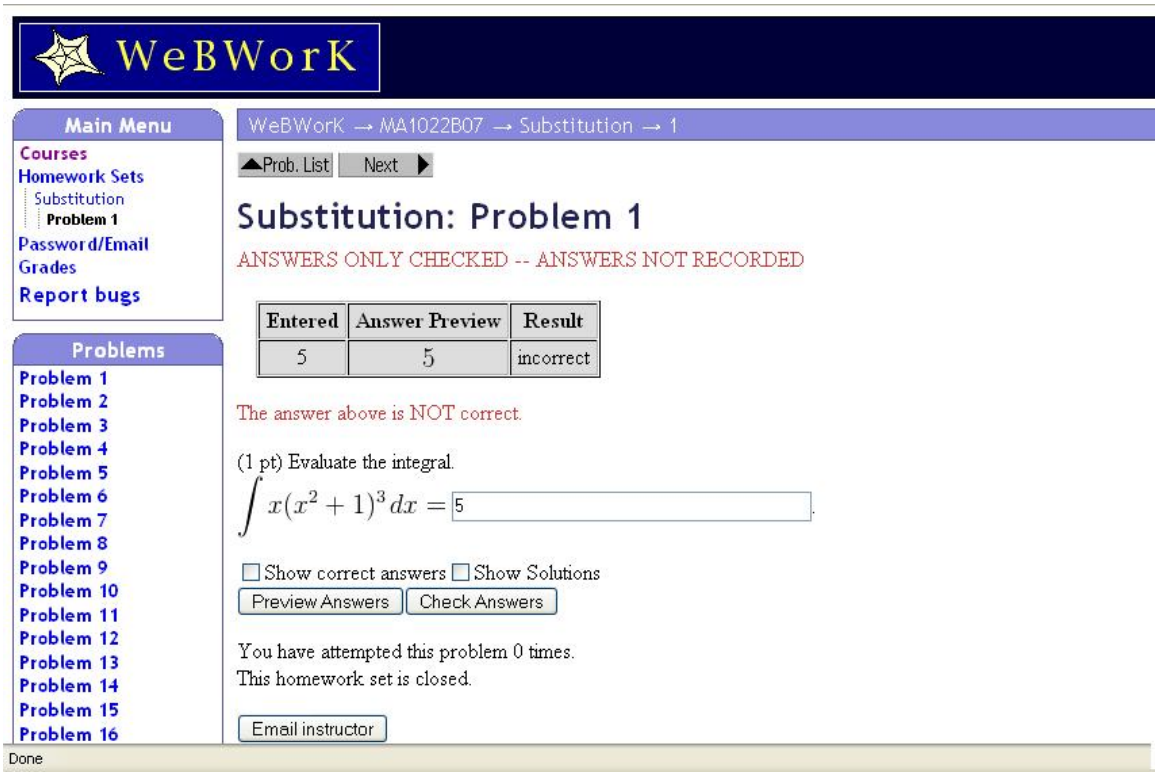


Figure 8 - WebWork doesn't offer hints, you don't know where you went wrong

The lack of explanations to the errors also leads to a negative response from the students using it. They know they're doing something wrong, but can't find out what. If they get the answer wrong several times though, that can trigger hints or a scaffolding question, which with sometimes complicated problems don't prove to be useful either so the student is forced to quit on the problem. This occurs since the problems are all different, so the hints end up being generalized and vague, rather than relating directly to the specific problem.

The last aspect which is the most important is the target audience each system is created for. The WebWork system is mainly used in colleges for a variety of classes, while Assistment is used in middle schools and high schools for mathematics. After looking at the

target audience, all the differences between the two systems stand explained. Each does what it's intended to do best, and that is how the differences between them occur.

7. Experiment Set Up

Since we wanted to see the results between Worked-out problems and Hints, we had to first create all the variations necessary for the experiment. We took sets of problems, which were already created, and created two more versions of the same problems, which were of the same difficulty and structure.

To make this idea clearer let's look at an example. Here is an assistment, which we'll refer to as *a-Hints*; it was previously created by other students:

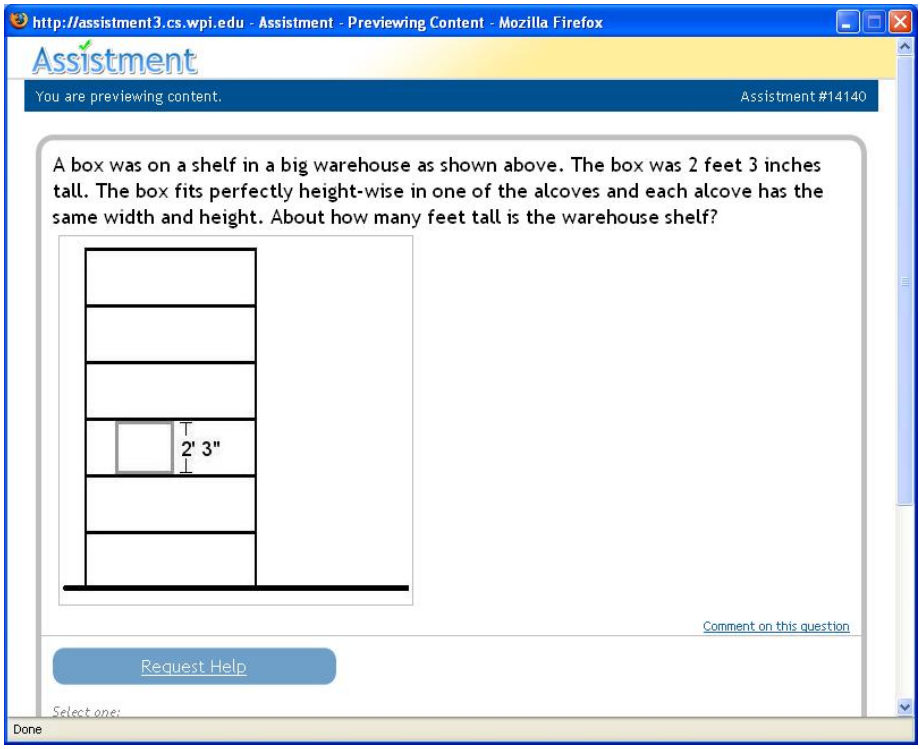


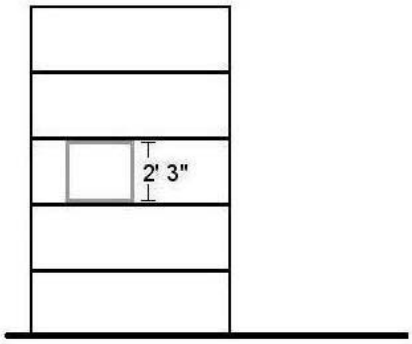
Figure 9 - Assistment *a-Hints*

We created a new assistment *b-Hints*, which had the exact same structure in problem body and hints as the latter, only used a slightly different set up:

Assistment

You are previewing content. Assistment #25008

A box was on a shelf in a big warehouse as shown above. The box was 2 feet 3 inches tall. The box fits perfectly height-wise in one of the alcoves and each alcove has the same width and height. About how many feet tall is the warehouse shelf?



Comment on this question

Because the box sits perfectly height-wise on the shelf, we can assume that to be the height of the alcove. There are 5 alcoves, so multiply the height of box by 5. Be mindful of conversion from inches to feet and feet back to inches.

Comment on this hint

$$\textit{Feet}: 2 * 5 = 10 \text{ feet}$$
$$\textit{Inches}: 3 * 5 = 15 \text{ inches} = 12 \text{ inches} + 3 \text{ inches}$$
$$= 1 \text{ foot and } 3 \text{ inches}$$
And so,
$$10 + 1 \text{ feet and } 3 \text{ inches} = 11 \text{ feet } 3 \text{ inches}$$

Comment on this hint

11 feet 3 inches is 11' 3" so select B. 11' 3"

Comment on this hint

Select one:

- A. 12' 5"
- B. 11' 3"
- C. 13' 8"
- D. 15'

Submit Answer

Correct!

Figure 10 - Assistment *b-Hints*

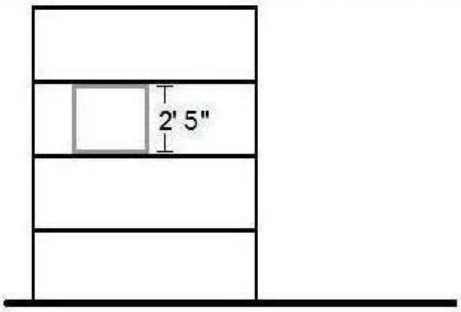
Using these two variations, we created two more. The new problems did not have a different body problem though, they had a different tutoring approach – instead of giving hints to the students we would give them worked out examples. The worked out examples presented a similar problem to the one stated, and following the hints, this new problem was solved. It was expected that using the solution, the students would go back to the original and apply the same steps for their own problem. These two new variations, which contained worked examples instead of hints, were called *a-Worked* and *b-Worked*. They looked the same as the originals, when the problem was stated but the tutoring approach looked like this:

Let's move on and figure out this problem

Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

A box was on a shelf in a big warehouse as shown above. The box was 2 feet 5 inches tall. The box fits perfectly height-wise in one of the alcoves and each alcove has the same width and height. About how many feet tall is the warehouse shelf?



Solution:

Because the box sits perfectly height-wise on the shelf, we can assume that to be the height of the alcove. There are 5 alcoves, so multiply the height of box by 5. Be mindful of conversion from inches to feet and feet back to inches.

Feet : 2*4 = 8 feet

Inches : 5 * 4 = 20 inches = 12 + 8 inches
= 1 foot 8 inches

And so,

8 + 1 foot 8 inches = 9 feet 8 inches

9 feet 8 inches is 9' 8" so the answer is 9' 8"

Comment on this question

Select one:

I have read the example and now I am ready to try again.

Submit Answer

Correct!

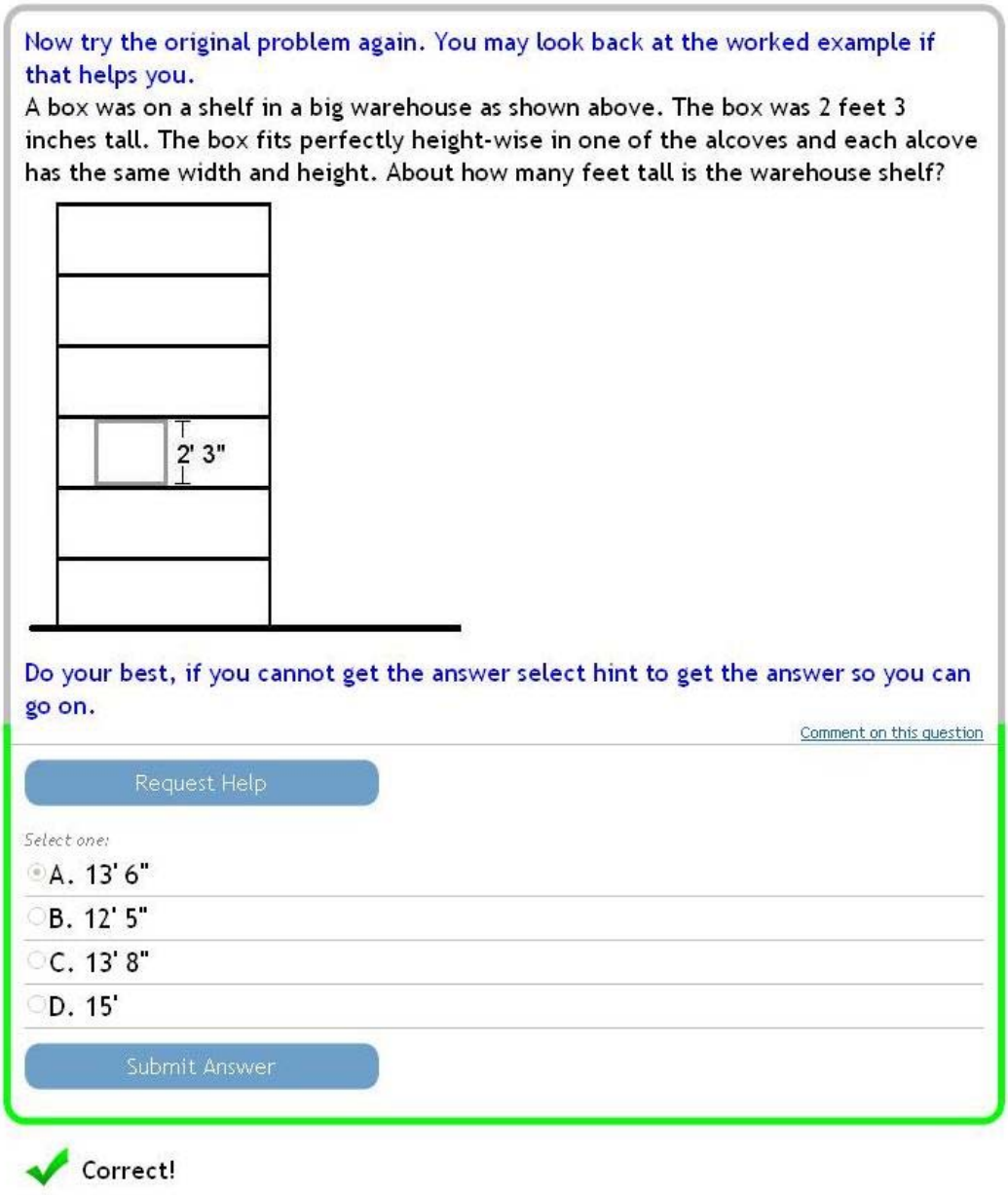


Figure 11 - Assistment Worked out

We did this for every problem in the investigation we were going to experiment in. Then for the actual experiment, we designed a structure for our tests. We decided against having a pre-test, since that would give too much additional work for the children, and they would most likely lose focus by the time they reach the post-test, so we based our structure

only on test and post-test. The test would give a child a random path – either worked-out problems or hints, and each child would then get a post-test, which consists only of assistments based on hints. If set *A-Hints* or *A-Worked* was used for the test, then set *B-Hints* was used for the post-test and vice versa.

How to make a set for testing Worked out problems?

The set, which is to be created, has the following tree-like structure:

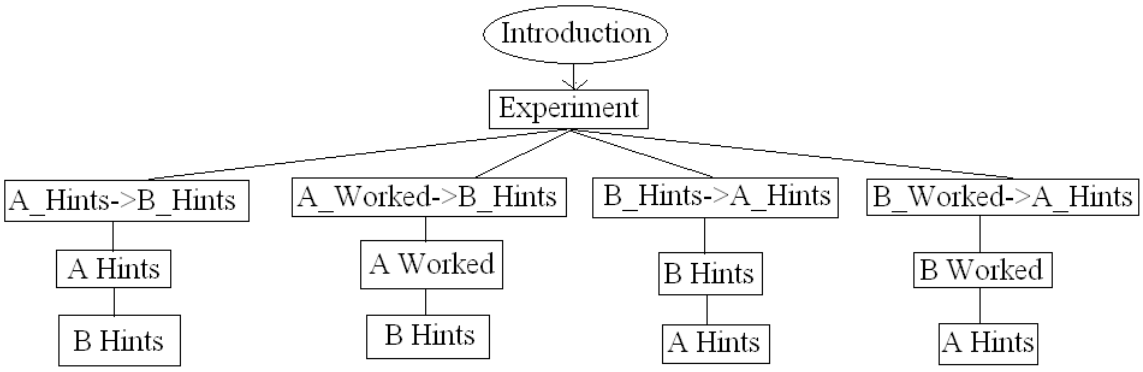


Figure 12 - Experiment Structure

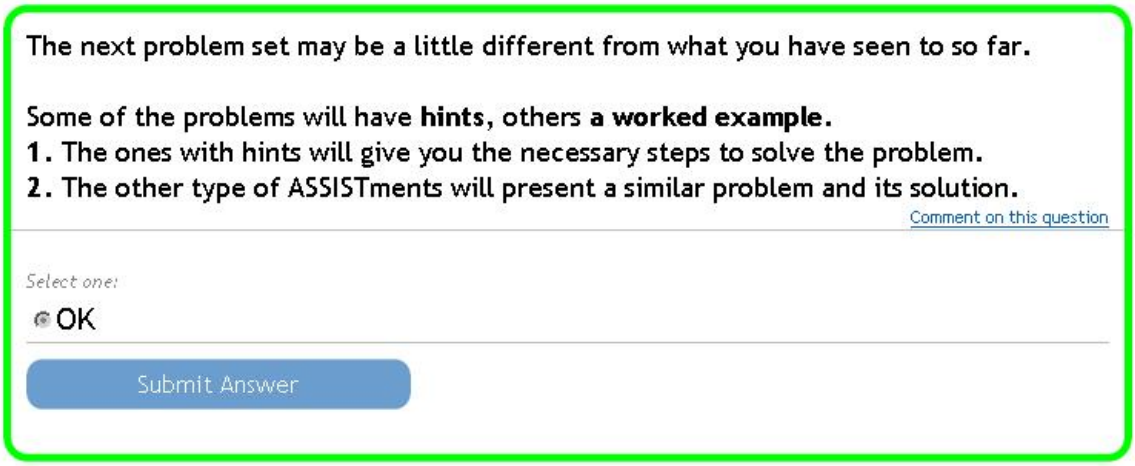
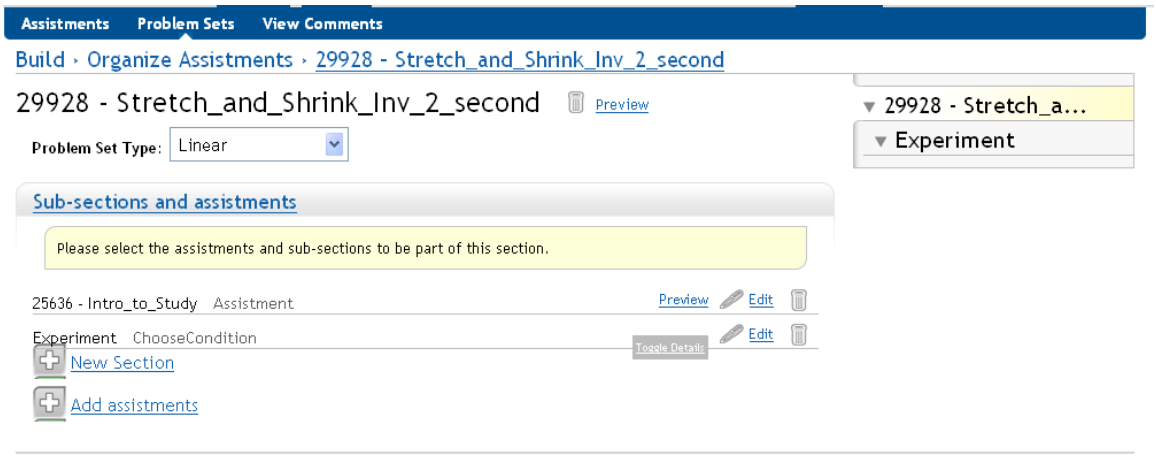
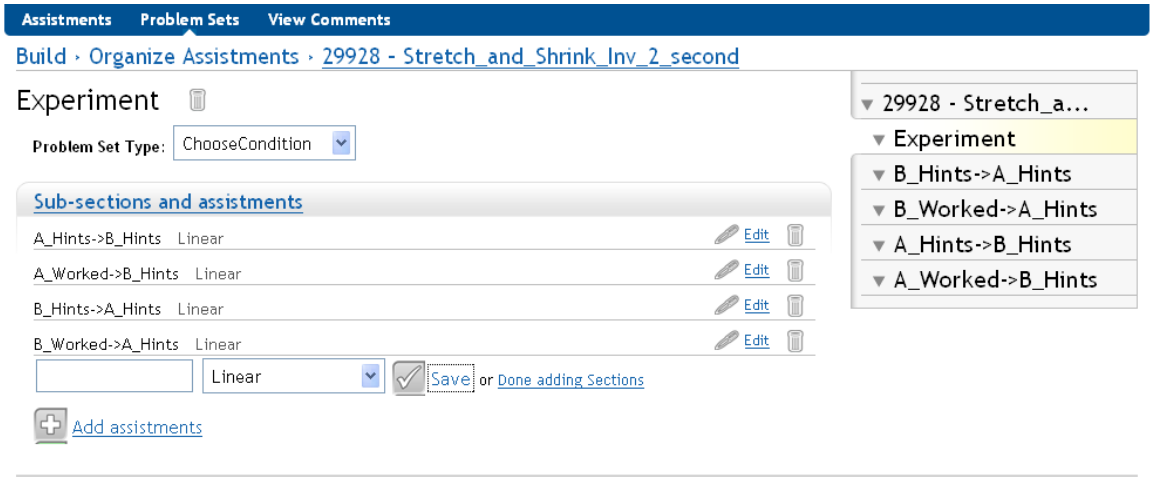


Figure 13 - Introduction for our Experiment

The Introduction is the standard introduction Assistment(#25636) and all the boxes are sections in the section they are a child of. The only section, which is directly in the set, is the Experiment. The set itself is set to Linear, the Experiment is set to ChooseCondition, since we want the child to do only one of the four conditions which are possible. This is how your set should look at this point:

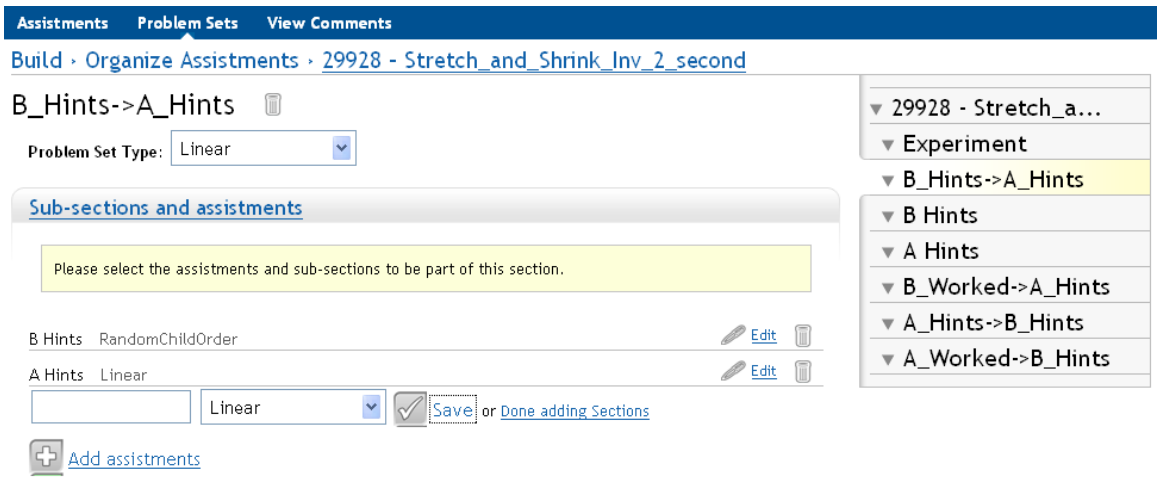


Then the experiment will have 4 sub-sections(A_Hints->B_Hints, A_Worked->B_Hints, B_Hints->A_Hints, B_Worked->A_Hints), all Linear, so it will look like this:



Every condition specifically has a post-test which contains hints, simply because hints are thought to take less time. They can be changed to worked examples, if preferred.

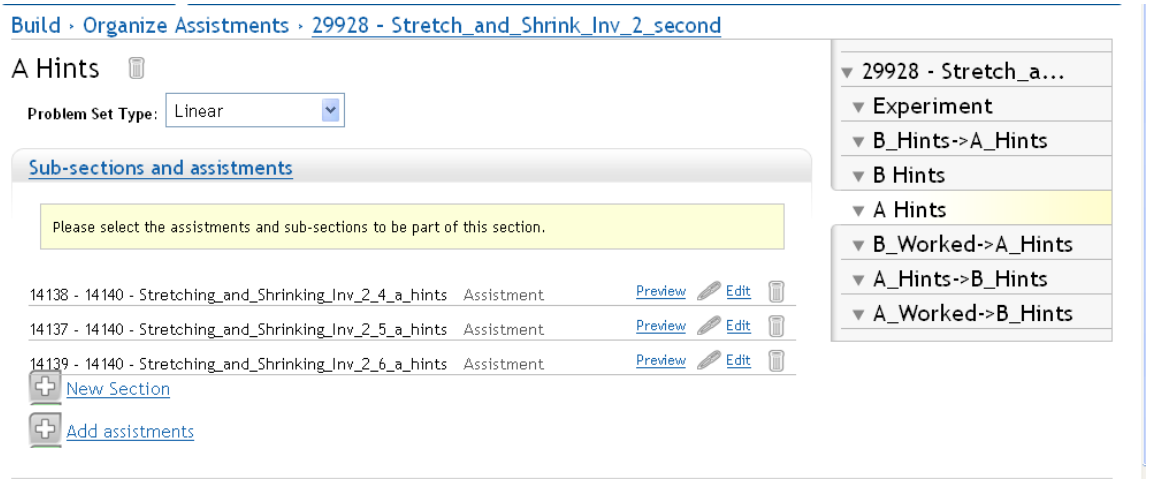
Then every sub-section here is split into the two sections of the test – test and post test. The names of the test and post test come from the section name itself, for example A_Hints->B_Hints contains test for A_Hints and a post test of B-Hints. So along these lines each one of these sub-sections should look like



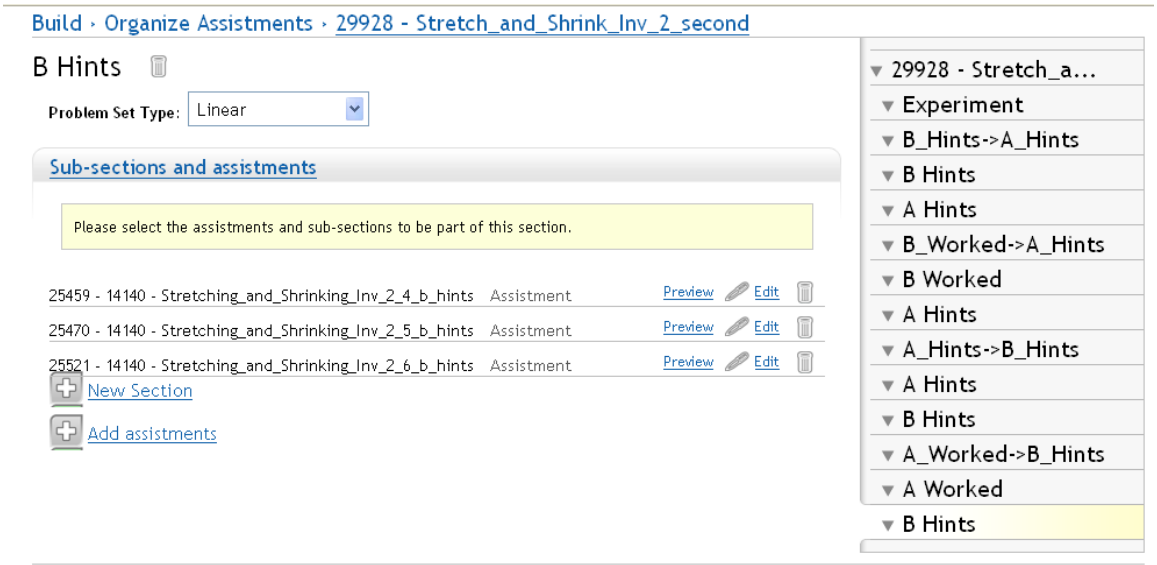
this:

As a side note, the test itself can be randomized, but in some cases this is not advised since a certain order of the problems might give away some answers.

After all the tests' and post tests' sections are created, we finally fill them up with the Assistments that go there. For example, in A Hints, we put version A problems with hints. This is how a section of this type would look:



So when you add an ASSISTMENT you can see its name and decide whether it's the one you want or not. The final tree can be seen in the menu bar in the following image:


Build › Organize Assistments › 29928 - Stretch_and_Shrink_Inv_2_second
B Hints
Problem Set Type: Linear
Sub-sections and assistments
Please select the assistments and sub-sections to be part of this section.
25459 - 14140 - Stretching_and_Shrinking_Inv_2_4_b_hints Assistment Preview Edit
25470 - 14140 - Stretching_and_Shrinking_Inv_2_5_b_hints Assistment Preview Edit
25521 - 14140 - Stretching_and_Shrinking_Inv_2_6_b_hints Assistment Preview Edit
New Section
Add assistments
29928 - Stretch_a...
Experiment
B_Hints->A_Hints
B Hints
A Hints
B_Worked->A_Hints
B Worked
A Hints
A_Hints->B_Hints
A Hints
B Hints
A_Worked->B_Hints
A Worked
B Hints

8. RESULTS

We designed the experiment and built Assistments for it in A and B terms of 2007. The described above experiment ran for the length of C term 2008. We were lucky enough to have 763 middle school students from eight middle schools in the Worcester, MA area participate in our study. The data were collected by the members of Tutor Research Group at WPI, converted to an Excel table and handed in to us to analyze.

	Sequence	Class Assignment	Teacher	School	User Id	Name	Student IRT	IRT_isHigh	Pre-test #1	Pre-test #2	Pre-test #3	Pre-test #4	Post-test #1	Post-test #2	Post-test #3
6549	5073	118251	dumphy: O	Forest Gr	62450	Josh A Ze	N\A	N\A	No_data	No_data	No_data	0	No_data	No_data	No_data
6550	5086	130267	dumphy: O	Forest Gr	62450	Josh A Ze	N\A	N\A	0	0	0	No_data	0	0	0
6553	5073	118252	dumphy: B	Forest Gr	62451	Cecilia R	N\A	N\A	0	0	0	0	No_data	No_data	No_data
6554	5073	118347	dumphy: P	Forest Gr	62453	Jazmine	N\A	N\A	0	0	0	0	0	1	0
6555	5085	118541	dumphy: P	Forest Gr	62453	Jazmine	N\A	N\A	0	0	0	0	0	0	0
6559	5073	118250	dumphy: R	Forest Gr	62454	Frank2 O	N\A	N\A	No_data	0	No_data	0	No_data	No_data	No_data
6560	5067	117471	Ms Olearc	Burncoat	62513	Irene J Ja	N\A	N\A	0	1	0	No_data	1	0	1
6561	5071	117859	Ms Olearc	Burncoat	62513	Irene J Ja	N\A	N\A	0	1	0	No_data	0	1	1
6562	5073	118247	Ms Olearc	Burncoat	62513	Irene J Ja	N\A	N\A	1	1	1	0	1	1	1
6563	5067	117473	Ms Olearc	Burncoat	62514	Alycia M	N\A	N\A	0	0	0	No_data	0	0	1
6564	5071	117861	Ms Olearc	Burncoat	62514	Alycia M	N\A	N\A	0	0	0	No_data	0	1	0
6565	5067	117473	Ms Olearc	Burncoat	62515	Delismar	N\A	N\A	0	0	0	No_data	1	0	0
6566	5071	117861	Ms Olearc	Burncoat	62515	Delismar	N\A	N\A	0	1	0	No_data	0	0	0
6567	5073	118249	Ms Olearc	Burncoat	62515	Delismar	N\A	N\A	1	0	0	0	1	0	0
6575	5074	137743	Tammi Cha	B. F. Brow	62542	Ryan T Br	N\A	N\A	0	1	0	No_data	1	0	0

Figure 14 - Sample data in Excel for analyzing

We wrote several computer programs to analyze text files that could be obtained by saving Excel spreadsheets as plain-text, but it appeared to be easier to analyze the data manually using advanced Excel features such as Pivot Tables and TTEST() functions. In the next sections are the detailed procedure and results we obtained from the data.

8.1 Stretching and Shrinking

1Results from Problem set #5066

First we're going to see if overall learning occurs at all, no matter what type of question sets the students got. To achieve this, we'll remove all students, which have not completed the entire experiment to keep the data consistent. Then we look at the overall average of the students, which in this case is 0.259 (M = 0.259). The One-Sample T Test value for 0 shows a p value of less than .0001 ($p < .0001$), which means that the value of .259 is significantly greater than zero so we can say that learning did occur overall.

Row Labels	Average of Total Gain
Hints	0.227848101
WE	0.290123457
Grand Total	**0.259375**

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
VAR00001	4.773	319	.000	.25938	.1525	.3663

The second step we're going to take is checking whether the distribution between the two types of problems was even, to make sure we can assume the results are based over sets of similar size. Before this we want to remove all the students, who aced the pretest, since for them it didn't even matter, which condition they were in. The two groups are very close in size so we continue analyzing the data.

Row Labels	Count of User Id
Hints	107
WE	112
Grand Total	**219**

Then we also have to check to see if within those groups the IRT of the students is close or identical (that is if all students come from the same looking distribution). Although the averages look slightly different, after a two-tail t test on Conditions vs. Worked examples, we got a p value of 0.419 (p = 0.419), which means there is a 41% probability that the students are all selected from two underlying populations which have the same

means. This result is sufficient for us to continue analyzing the data since the pretest is balanced.

Row Labels	Average of Student IRT
Hints	0.046945402
WE	0.151059723
Grand Total	**0.100191082**

So finally what we want to do is compare the results of learning we found for students in the different conditions and see if there is a ground for assuming one is better than the other. Looking at the averages of the total gain divided by condition, we can see that if the distributions are in fact significantly different, then worked-out examples will be a better means of learning. The result from the two-tail t test on hints vs. worked examples however was 0.226. This means there is a 22% chance that they came from the same underlying distribution, which means there is not a significant difference between the result sets, so we cannot conclude one is better than the other.

Row Labels	Average of Total Gain
Hints	0.411214953
WE	0.473214286
Grand Total	**0.442922374**

Results from Problem set #5067

First we're going to see if overall learning occurs at all, no matter what type of question sets the students got. To achieve this, we'll remove all students, which have not completed the entire experiment to keep the data consistent. Then we look at the overall

average of the students, which in this case is 0.241 (M=0.241). The One-Sample T Test value for 0 shows a p value of less than .0001 (p < .0001), which means that the value of .259 is significantly greater than zero so we can say that learning did occur overall.

Row Labels	Average of Total Gain
Hints	0.173333333
WE	0.35
Grand Total	**0.24109589**

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
VAR00001	4.639	364	.000	.24110	.1389	.3433

The second step we're going to take is checking whether the distribution between the two types of problems was even, to make sure we can assume the results are based over sets of similar size. Before this we want to remove all the students, who aced the pretest, since for them it didn't even matter, which condition they were in. The two groups don't seem to evenly distributed, so we will additionally filter them by date; we will take all samples from after February 28 due to the changes in the system which occurred on that date.

Row Labels	Count of User Id
Hints	159
WE	98
Grand Total	**257**

The sizes of the sets now are very close in size, although significantly smaller. We continue analyzing the data in this filtered form.

AfterFeb28	Yes

Row Labels	Count of User Id
Hints	39
WE	32
Grand Total	**71**

Then we also have to check to see if within those groups the IRT of the students is close or identical (that is if all students come from the same looking distribution). Although the averages look slightly different, after a two-tail t test on Conditions vs. Worked examples, we got a p value of 0.0477 (p=0.0477), which means there is a 4.7% probability that the students are all selected from two underlying populations which have the same means. This result doesn't give us sufficient grounds to continue analyzing the data, since the students are not evenly distributed in the two condition sets according to IRT, so the results will be inconclusive.

AfterFeb28	Yes

Row Labels	Average of Student IRT
Hints	0.174371179
WE	-0.157435188
Grand Total	**0.024824648**

Results from Problem set #5071

First we're going to see if overall learning occurs at all, no matter what type of question sets the students got. To achieve this, we'll remove all students, which have not completed the entire

experiment to keep the data consistent. Then we look at the overall average of the students, which in this case is 0.4349 (M=0.4349). The One-Sample T Test value for 0 shows a p value of less than .0001 (p<.0001), which means that the value of .4349 is significantly greater than zero so we can say that learning did occur overall.

Row Labels	Average of Total Gain
Hints	0.476510067
WE	0.383333333
Grand Total	**0.434944238**

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
VAR00001	7.186	268	.000	.43494	.3158	.5541

The second step we're going to take is checking whether the distribution between the two types of problems was even, to make sure we can assume the results are based over sets of similar size. Before this we want to remove all the students, who aced the pretest, since for them it didn't even matter, which condition they were in. The two groups are very close in size so we continue analyzing the data.

Row Labels	Count of User Id
Hints	132
WE	101
Grand Total	**233**

Then we also have to check to see if within those groups the IRT of the students is close or identical (that is if all students come from the same looking distribution). Although the averages look slightly different, after a two-tail t test on Conditions vs. Worked examples, we got a p value of 0.5699

(p=0.5699), which means there is a 57% probability that the students are all selected from two underlying populations which have the same means. This result is sufficient for us to continue analyzing the data since the pretest is balanced.

Row Labels	Average of Student IRT
Hints	0.502134205
WE	0.428628535
Grand Total	**0.470271232**

So finally what we want to do is compare the results of learning we found for students in the different conditions and see if there is a ground for assuming one is better than the other. Looking at the averages of the total gain divided by condition, we can see that if the distributions are in fact significantly different, then hints will be a better means of learning. The result from the two-tail t test on hints vs. worked examples however was 0.3492. This means there is a 35% chance that they came from the same underlying distribution, which means there is not a significant difference between the result sets, so we cannot conclude one is better than the other.

Row Labels	Average of Total Gain
Hints	0.522727273
WE	0.396039604
Grand Total	**0.467811159**

Results from Problem set #5072

First we're going to see if overall learning occurs at all, no matter what type of question sets the students got. To achieve this, we'll remove all students, which have not completed the entire experiment to keep the data consistent. Then we look at the overall average of the students, which in this case is 0.1845(p=0.1845). The One-Sample T Test

value for 0 shows a p value of less than .05(p<.05), which means that the value of 0.1845 is significantly greater than zero so we can say that learning did occur overall.

Row Labels	Average of Total Gain
Hints	0.084210526
WE	0.315068493
Grand Total	**0.18452381**

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
VAR00001	2.189	167	.030	.18452	.0181	.3509

The second step we're going to take is checking whether the distribution between the two types of problems was even, to make sure we can assume the results are based over sets of similar size. Before this we want to remove all the students, who aced the pretest, since for them it didn't even matter, which condition they were in. The two groups are very close in size so we continue analyzing the data.

Row Labels	Count of User Id
Hints	78
WE	55
Grand Total	**133**

Then we also have to check to see if within those groups the IRT of the students is close or identical (that is if all students come from the same looking distribution). Although the averages look slightly different, after a two-tail t test on Conditions vs. Worked examples, we got a p value of 0.467717 (p=0.467717), which means there is a 46%

probability that the students are all selected from two underlying populations which have the same means. This result is sufficient for us to continue analyzing the data since the pretest is balanced.

Row Labels	Average of Student IRT
Hints	0.576252577
WE	0.713100418
Grand Total	**0.632843789**

So finally what we want to do is compare the results of learning we found for students in the different conditions and see if there is a ground for assuming one is better than the other. Looking at the averages of the total gain divided by condition, we can see that if the distributions are in fact significantly different, then hints will be a better means of learning. The result from the two-tail t test on hints vs. worked examples however was 0.3038. This means there is a 30% chance that they came from the same underlying distribution, which means there is not a significant difference between the result sets, so we cannot conclude one is better than the other.

Row Labels	Average of Total Gain
Hints	0.141025641
WE	0.327272727
Grand Total	**0.218045113**

Results from Problem set #5073

First we're going to see if overall learning occurs at all, no matter what type of question sets the students got. To achieve this, we'll remove all students, which have not completed the entire experiment to keep the data consistent. Then we look at the overall average of the students, which in this case is 0.3394 (M=0.3394). The One-Sample T Test

value for 0 shows a p value of less than .0001 (p<.0001), which means that the value of 0.3394 is significantly greater than zero so we can say that learning did occur overall.

Row Labels	Average of Total Gain
Hints	0.365384615
WE	0.274193548
Grand Total	**0.339449541**

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
VAR00001	4.859	217	.000	.33945	.2018	.4771

The second step we're going to take is checking whether the distribution between the two types of problems was even, to make sure we can assume the results are based over sets of similar size. Before this we want to remove all the students, who aced the pretest, since for them it didn't even matter, which condition they were in.

Row Labels	Count of User Id
Hints	147
WE	55
Grand Total	**202**

As we can see from the table above, the number of students who took the Hints version of the test differs greatly from that of WE. This can be explained by a particularity of the system that was eliminated after February 2008. Unfortunately, we will not get encouraging results even if we eliminate all the data obtained prior to February 2008. Therefore, our further analysis will not be meaningful.

Row Labels	Count of User Id
Hints	53
WE	13
Grand Total	**66**

Results from Problem set #5076

First we're going to see if overall learning occurs at all, no matter what type of question sets the students got. To achieve this, we'll remove all students, which have not completed the entire experiment to keep the data consistent. Then we look at the overall average of the students, which in this case is 0.3867(M=0.3867). The One-Sample T Test value for 0 shows a p value of less than .0001($p < .0001$), which means that the value of .3867 is significantly greater than zero so we can say that learning did occur overall.

Row Labels	Average of Total Gain
Hints	0.281481481
WE	0.504132231
Grand Total	**0.38671875**

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
VAR00001	6.775	255	.000	.38672	.2743	.4991

The second step we're going to take is checking whether the distribution between the two types of problems was even, to make sure we can assume the results are based over sets of similar size. Before this we want to remove all the students, who aced the pretest, since for them it didn't even matter, which condition they were in. The two groups are very close in size so we continue analyzing the data.

Row Labels	Count of User Id
Hints	114
WE	107
Grand Total	**221**

Then we also have to check to see if within those groups the IRT of the students is close or identical (that is if all students come from the same looking distribution). Although the averages look slightly different, after a two-tail t test on Conditions vs. Worked examples, we got a p value of 0.02031 (p=0.02031), which means there is a 2% probability that the students are all selected from two underlying populations which have the same means. This result gives us sufficient reason to throw out the data as unusable, since it seems as though the students for the different conditions were picked from different distributions, which makes the results irrelevant.

Row Labels	Average of Student IRT
Hints	0.452440702
WE	0.723332486
Grand Total	**0.583596452**

Results from Problem set #5085

First we're going to see if overall learning occurs at all, no matter what type of question sets the students got. To achieve this, we'll remove all students, which have not completed the entire experiment to keep the data consistent. Then we look at the overall average of the students, which in this case is 0.1969 (M=0.1969). The One-Sample T Test value for 0 shows a p value of less than .01 ($p < .01$), which means that the value of 0.1969 is significantly greater than zero so we can say that learning did occur overall.

Row Labels	Average of Total Gain

Hints	0.2
WE	0.193548387
Grand Total	**0.196969697**

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
VAR00001	2.499	237	.013	.16387	.0347	.2931

The second step we're going to take is checking whether the distribution between the two types of problems was even, to make sure we can assume the results are based over sets of similar size. Before this we want to remove all the students, who aced the pretest, since for them it didn't even matter, which condition they were in. The two groups are very close in size so we continue analyzing the data.

Row Labels	Count of User Id
Hints	96
WE	75
Grand Total	**171**

Then we also have to check to see if within those groups the IRT of the students is close or identical (that is if all students come from the same looking distribution). Although the averages look slightly different, after a two-tail t test on Conditions vs. Worked examples, we got a p value of 0.891546 (p=0.891546), which means there is a 89% probability that the students are all selected from two underlying populations which have the same means. This result is sufficient for us to continue analyzing the data since the pretest is balanced.

Row Labels	Average of Student IRT
Hints	0.491014792
WE	0.507672267
Grand Total	**0.498320702**

So finally what we want to do is compare the results of learning we found for students in the different conditions and see if there is a ground for assuming one is better than the other. Looking at the averages of the total gain divided by condition, we can see that if the distributions are in fact significantly different, then hints will be a better means of learning. The results from the two-tail t test on hints vs. worked examples however were 0.9740. This means there is a 97% chance that they came from the same underlying distribution, which means there is not a significant difference between the result sets, so we cannot conclude one is better than the other.

Row Labels	Average of Total Gain
Hints	0.21875
WE	0.213333333
Grand Total	**0.216374269**

Conclusions for the Stretching and Shrinking sets

In conclusion two of the sets from Stretching and Shrinking (#5067, #5076) do not have well distributed students by IRT in the two conditions. The students look like selected from different distributions so there is no purpose in further analyzing the data, since the students look different so the effects on them cannot be compared. Set #5073 has disbalance in the number of students who were assigned worked example versions of the set and hint versions of the set. The other two sets from Stretching and Shrinking (#5066, #5071, #5072, #5085) possess well distributed students, which come from the same distribution, so further analysis was done on the total gain results of the two conditions.

After analyzing the total gain results in this case, even though there seemed to be a difference between the averages (in one case in favor of hints, in the other case in favor of worked out examples), the t test values in both cases are less than .05, which shows that all the results look like they come from the same distribution; this means that we get the same results from hints and worked out examples and based on this data we can't state one is better than the other.

The analysis of overall learning in all these sets from Stretching and Shrinking proved to have a positive result. The students learned both from the worked-example problems and from the hints problems, so at least we can conclude that the tutoring system achieves learning, although we can't determine one way of tutoring to be better than the other.

8.2 Moving Straight Ahead

1) Set 5074
   - Group balance in term of IRT number by the two conditions (hints versus worked examples)

Count of User Id	Column Labels		
Row Labels	**Hints**	**WE**	**Grand Total**
0	9	16	25
1	13	15	28
N\A	15	60	75
Grand Total	**37**	**91**	**128**

We can that the students that do not have an IRT number assigned show a large discrepancy in terms of our condition. Consequently, we will leave them out for our purpose and analyze just the students that have assigned a number.

Count of User Id	Column Labels		
Row Labels	**Hints**	**WE**	**Grand Total**
0	9	16	25
1	13	15	28
Grand Total	**22**	**31**	**53**

Here the situation shows more promise.

   - Pretest balance

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Count of PretestAverage
Hints	16
WE	13
Grand Total	**29**

We filtered out the sets that have not been completed and we are left with this result: only 29 from 53. Next, we will analyze if the pretest is balanced on terms of the average on their results.

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of PretestAverage
Hints	0.458333333
WE	0.435897436
Grand Total	**0.448275862**

The table above clearly shows that they look similarly.

- Distribution of the pupils that have an IRT number

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of Student IRT
Hints	0.705885188
WE	-0.014662462
Grand Total	**0.382881069**

We will now do a T-test to establish if they are different.

- T-test

Row Labels	Hints	WE	Grand Total
52616	-0.44325		-0.44325
53969	-0.29254		-0.29254
53975	-0.19468		-0.19468
59917	0.04872		0.04872
61699	0.082419		0.082419
61865	0.138289		0.138289
53968	0.395658		0.395658
55632	0.435944		0.435944
52068	0.801969		0.801969
61868	1.328245		1.328245
52057	1.332684		1.332684

54639	1.345298		1.345298
53961	1.366035		1.366035
59914	1.403492		1.403492
52054	1.441666		1.441666
54313	2.104217		2.104217
59922		-2.02135	-2.02135
56720		-1.94732	-1.94732
53983		-1.44169	-1.44169
59919		-0.47316	-0.47316
52932		-0.22245	-0.22245
56458		-0.07236	-0.07236
52679		0.257977	0.257977
55641		0.455098	0.455098
59924		0.482058	0.482058
61687		0.619476	0.619476
52058		1.000852	1.000852
61629		1.262247	1.262247
61876		1.91001	1.91001

The T-test has given the result p = 0.06 which says that there is 6 % chance that a difference this big would cause us to reject the null hypothesis.

At this point we can conclude that the students are moderately balanced.

- Overall learning

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Set 5074	1.491	28	.147	.27586	-.1031	.6548

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Set 5074	29	.2759	.99630	.18501

As we can see, the overall learning is about .2759 divided by 3 (the number of items in the pretest). That equals .09 which is almost 10%. We can roughly say that one from very 10 items would enable a pupil to learn from it.

- Difference by condition (hints vs. WE)

We are going to drop the students that had 100% average on their pretest. That leaves us with 25 students.

There is a reliable difference p = 0.021793. It's does not offer too much promise, but we can continue to see in what direction.

IRT_isHigh	(Multiple Items)
completeOrNot	complete
PretestAverage	(Multiple Items)

Row Labels	**Average of Total Gain**
Hints	0.5
WE	0.363636364
Grand Total	**0.44**

From this table, the conclusion is that the most items from which the students learned more are the ones with hints. However, we must study more sets as part of this curriculum to reach to a more reliable result.

2) <u>Set 5075</u>

- Group balance in term of IRT number by the two conditions (hints versus worked examples)

Count of User Id	**Column Labels**		
Row Labels	**Hints**	**WE**	**Grand Total**
0	4	11	15
1	7	7	14
N\A	34	38	72

Grand Total	**45**	**56**	**101**

The above chart says that the groups are balanced, even for the pupils who do not have assigned an IRT number.

- Pretest balance

completeOrNot	complete

Row Labels	Count of User Id
Hints	44
WE	56
Grand Total	**100**

After eliminating the sets that have not been completed and we are left with 100 results from 101. Next, we will analyze if the pretest is balanced on terms of the average on their results.

completeOrNot	complete

Row Labels	Average of PretestAverage
Hints	0.856060606
WE	0.791666667
Grand Total	**0.82**

The pretest results show a moderate similarity between the pretests.

- Distribution of the pupils that have an IRT number

completeOrNot	complete

Row Labels	Average of Student IRT
Hints	0.6375019
WE	0.1286275
Grand Total	**0.310368357**

We will now do a T-test to establish if they are different.

- T-test

Row Labels	Hints	WE	Grand Total
56720	-1.94732		-1.94732
52616	-0.44325		-0.44325
61880	-0.0801		-0.0801
59917	0.04872		0.04872
61687	0.619476		0.619476
61868	1.328245		1.328245
54639	1.345298		1.345298
59914	1.403492		1.403492
61876	1.91001		1.91001
53140	2.190452		2.190452
59922		-2.02135	-2.02135
54013		-1.39271	-1.39271
53996		-1.15637	-1.15637
53915		-0.51028	-0.51028
59919		-0.47316	-0.47316
53969		-0.29254	-0.29254
53975		-0.19468	-0.19468
61699		0.082419	0.082419
61865		0.138289	0.138289
57049		0.459365	0.459365
59924		0.482058	0.482058
54321		0.512673	0.512673
52679		0.515954	0.515954
61867		0.693732	0.693732
61629		1.262247	1.262247
54313		2.104217	2.104217
53974		2.105432	2.105432

The T-test has given the result p = 0.290319 which says that there is 29 % chance that a difference this big would cause us to reject the null hypothesis.

At this point we can conclude that the students are balanced.

- Overall learning

One-Sample Test

	Test Value = 0				
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference

					Lower	Upper
Set 5075	.891	26	.381	.14815	-.1936	.4899

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Set 5075	27	.1481	.86397	.16627

As we can see, the overall learning is about .1481 divided by 3 (the number of items in the pretest). That equals .05 which is almost 5%. We can roughly say that one from very 20 items would enable a pupil to learn from it.

- Difference by condition (hints vs. WE)

We are going to drop the students that had 100% average on their pretest. That leaves us with 16 students.

There is a reliable difference p = 0.987068. The result is reliable for our needs and we can continue to see in what direction.

completeOrNot	complete
IRT_isHigh	(Multiple Items)
PretestAverage	(Multiple Items)

Row Labels	**Average of Total Gain**
Hints	-0.666666667
WE	0.538461538
Grand Total	**0.3125**

The conclusion is clear: the most items from which the students learned more are the ones with worked examples. We will continue to study the remaining sets from the curriculum.

3) Set 5082

- Group balance in term of IRT number by the two conditions (hints versus worked examples)

Count of User Id	Column Labels		
Row Labels	**Hints**	**WE**	**Grand Total**
0	8	7	15
1	9	4	13
N\A	53	20	73
Grand Total	**70**	**31**	**101**

We can that the students that do not have an IRT number assigned show a large discrepancy in terms of our condition. Consequently, we will leave them out for our purpose and analyze just the students that have assigned a number.

Count of User Id	Column Labels		
Row Labels	**Hints**	**WE**	**Grand Total**
0	8	7	15
1	9	4	13
Grand Total	**17**	**11**	**28**

Here, we have a more balanced situation.

- Pretest balance

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Count of PretestAverage
Hints	14
WE	8
Grand Total	**22**

We filtered out the sets that have not been completed and we are left with this result: only 22 from 28. Next, we will analyze if the pretest is balanced on terms of the average on their results.

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of PretestAverage
Hints	0.642857143
WE	0.625
Grand Total	**0.636363636**

The table above clearly shows that they look similarly.

- Distribution of the pupils that have an IRT number

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of Student IRT
Hints	0.357987571
WE	0.4018525
Grand Total	**0.373938455**

We will now do a T-test to establish if they are different.

- T-test

Row Labels	Hints	WE	Grand Total
59922	-2.02135		-2.02135
56720	-1.94732		-1.94732
52928	-0.49348		-0.49348
52616	-0.44325		-0.44325
53975	-0.19468		-0.19468
61880	-0.0801		-0.0801
61699	0.082419		0.082419
61687	0.619476		0.619476
61867	0.693732		0.693732
61629	1.262247		1.262247
61868	1.328245		1.328245
61876	1.91001		1.91001
53974	2.105432		2.105432
53140	2.190452		2.190452
54018		-0.88997	-0.88997
59919		-0.47316	-0.47316

59917	0.04872	0.04872
61865	0.138289	0.138289
57049	0.459365	0.459365
59924	0.482058	0.482058
54639	1.345298	1.345298
54313	2.104217	2.104217

The T-test has given the result p = 0.936504 which says that there is 93 % chance that a difference this big would cause us to reject the null hypothesis.

At this point we can conclude that the students are balanced.

- Overall learning

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Set 5082	1.748	21	.095	.40909	-.0777	.8959

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Set 5082	22	.4091	1.09801	.23410

As we can see, the overall learning is about .4091 divided by 3 (the number of items in the pretest). That equals .1363 which is almost 14%. We can roughly say that one from very 10 items would enable a pupil to learn from it.

- Difference by condition (hints vs. WE)

We are going to drop the students that had 100% average on their pretest. That leaves us with 19 students.

There is a reliable difference p = 0.351886. This set of data provides a good reliability. Next, we must see in what direction this is true.

IRT_isHigh	(Multiple Items)
completeOrNot	complete
PretestAverage	(Multiple Items)

Row Labels	Average of Total Gain
Hints	1
WE	0.857142857
Grand Total	**0.928571429**

In this set, the most items from which the students learned more are the ones with hints.

4) Set 5081

- Group balance in term of IRT number by the two conditions (hints versus worked examples)

Row Labels	Hints	WE	Grand Total
0	8	7	15
1	5	10	15
N\A	51	21	72
Grand Total	**64**	**38**	**102**

We can that the students that do not have an IRT number assigned show a large discrepancy in terms of our condition. Consequently, we will leave them out for our purpose and analyze just the students that have assigned a number.

Row Labels	Hints	WE	Grand Total
0	8	7	15
1	5	10	15
Grand Total	**13**	**17**	**30**

Here the situation shows more promise.

- Pretest balance

IRT_isHigh	(Multiple Items)

completeOrNot	complete

Row Labels	Count of PretestAverage
Hints	11
WE	15
Grand Total	**26**

We filtered out the sets that have not been completed and we are left with this result: only 26 from 30. Next, we will analyze if the pretest is balanced on terms of the average on their results.

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of PretestAverage
Hints	0.818181818
WE	0.6
Grand Total	**0.692307692**

The pretest results show a moderate similarity between the pretests.

- Distribution of the pupils that have an IRT number

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of Student IRT
Hints	0.236675545
WE	0.678467267
Grand Total	**0.491555385**

We will now do a T-test to establish if they are different.

- T-test

Row Labels	Hints	WE	Grand Total
54313	-2.02135		-2.02135
59922	-0.44325		-0.44325
54639	-0.37228		-0.37228
52051	-0.30306		-0.30306

59919	0.082419		0.082419
61629	0.138289		0.138289
56720	0.482058		0.482058
61687	0.693732		0.693732
53974	0.896143		0.896143
52063	1.345298		1.345298
61865	2.105432		2.105432
52071		-1.94732	-1.94732
53969		-0.47316	-0.47316
61699		-0.29254	-0.29254
61880		-0.0801	-0.0801
53140		0.04872	0.04872
52090		0.453897	0.453897
52082		0.459365	0.459365
59917		0.619476	0.619476
52616		0.867656	0.867656
57049		1.262247	1.262247
61868		1.328245	1.328245
52111		1.725845	1.725845
61876		1.91001	1.91001
61867		2.104217	2.104217
59924		2.190452	2.190452

The T-test has given the result p = 0.326677 which says that there is 32 % chance that a difference this big would cause us to reject the null hypothesis.

At this point we can conclude that the students are balanced.

- Overall learning

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Set 5081	2.368	25	.026	.34615	.0451	.6472

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Set 5081	26	.3462	.74524	.14615

As we can see, the overall learning is about .3462 divided by 3 (the number of items in the pretest). That equals .1154 which is almost 12%. We can roughly say that one from very 10 items would enable a pupil to learn from it.

- Difference by condition (hints vs. WE)

We are going to drop the students that had 100% average on their pretest. That leaves us with 17 students.

There is a reliable difference p = 0.170816. This set of data is reliable. Next, we must see in what direction this is true.

IRT_isHigh	(Multiple Items)
completeOrNot	complete
PretestAverage	(Multiple Items)

Row Labels	Average of Total Gain
Hints	0.6
WE	0.666666667
Grand Total	**0.647058824**

In this set, worked examples have proven to be slightly more effective in student learning.

5) <u>Set 5086</u>

- Group balance in term of IRT number by the two conditions (hints versus worked examples)

Row Labels	Hints	WE	Grand Total
0	5	6	11
1	8	7	15
N\A	49	22	71
Grand Total	**62**	**35**	**97**

And after eliminating the students without an IRT we have:

Row Labels	Hints	WE	Grand Total
0	5	6	11
1	8	7	15
Grand Total	**13**	**13**	**26**

The table shows a perfect balance for our conditions.

- Pretest balance

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Count of PretestAverage
Hints	12
WE	13
Grand Total	**25**

We filtered out the sets that have not been completed and we are left with this result: only 25 from 26. Next, we will analyze if the pretest is balanced on terms of the average on their results.

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of PretestAverage
Hints	0.694444444
WE	0.666666667
Grand Total	**0.68**

The two conditions are similar between them, in term of the pretests.

- Distribution of the pupils that have an IRT number

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of Student IRT
Hints	0.493338167
WE	0.303369692
Grand Total	**0.39455456**

We will now do a T-test to establish if they are different.

- T-test

Row Labels	Hints	WE
56720	-1.94732	
53746	-1.02918	
59919	-0.47316	
61699	0.082419	
61865	0.138289	
52063	0.453897	
61687	0.619476	
61867	0.693732	
61629	1.262247	
61876	1.91001	
54313	2.104217	
53974	2.105432	
59922		-2.02135
52616		-0.44325
52111		-0.37228
53969		-0.29254
61880		-0.0801
59917		0.04872
57049		0.459365
59924		0.482058
52082		0.867656
52090		0.896143
61868		1.328245
54639		1.345298
52071		1.725845

The T-test has given the result p = 0.677674 which says that there is 67 % chance that a difference this big would cause us to reject the null hypothesis.

At this point we can conclude that the students are balanced.

- Overall learning

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper

Set 5086	2.613	24	.015	.48000	.1009	.8591

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Set 5086	25	.4800	.91833	.18367

As we can see, the overall learning is about .48 divided by 3 (the number of items in the pretest). That equals .16 or 16%. We can roughly say that one from very 7 items would enable a pupil to learn from it.

- Difference by condition (hints vs. WE)

  We are going to drop the students that had 100% average on their pretest. That leaves us with 15 students.

  There is a reliable difference p = 0.230417. This set of data is reliable. Next, we must see in what direction this is true.

IRT_isHigh	(Multiple Items)
completeOrNot	complete
PretestAverage	(Multiple Items)

Row Labels	Average of Total Gain
Hints	1
WE	0.9
Grand Total	**0.933333333**

As we can see, problems with hints had a better learning outcome.

6) <u>Set 5088</u>

- Group balance in term of IRT number by the two conditions (hints versus worked examples)

Row Labels	Hints	WE	Grand Total

0	8	7	15
1	8	8	16
N\A	39	32	71
Grand Total	**55**	**47**	**102**

The above chart says that the groups are balanced, even for the pupils who do not have assigned an IRT number.

- Pretest balance

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	**Count of PretestAverage**
Hints	11
WE	11
Grand Total	**22**

We filtered out the sets that have not been completed and we are left with this result: only 22 from 31. Next, we will analyze if the pretest is balanced on terms of the average on their results.

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	**Average of PretestAverage**
Hints	0.363636364
WE	0.575757576
Grand Total	**0.46969697**

The pretest results show a quite a difference between the pretests: +/- 10% from the average. This indicates that students found hints less helpful than worked examples, but let us explore more.

- Distribution of the pupils that have an IRT number

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of Student IRT
Hints	0.182940818
WE	0.616088636
Grand Total	**0.399514727**

We will now do a T-test to establish if they are different.

- T-test

Row Labels	Hints	WE
56720	-1.94732	
53746	-1.02918	
53980	-0.46274	
53969	-0.29254	
61880	-0.0801	
52078	0.172384	
61687	0.619476	
61867	0.693732	
53666	0.906181	
61868	1.328245	
54313	2.104217	
52616		-0.44325
59917		0.04872
61865		0.138289
55184		0.367485
55185		0.444447
55188		0.444448
53997		0.453234
58702		0.806047
61629		1.262247
54639		1.345298
61876		1.91001

The T-test has given the result p = 0.286041 which says that there is 28 % chance that a difference this big would cause us to reject the null hypothesis.

At this point we can conclude that the students are balanced.

- Overall learning

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference Lower	Upper
Set 5088	.204	21	.840	.04545	-.4181	.5090

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Set 5088	22	.0455	1.04550	.22290

As we can see, the overall learning is about .0455 divided by 3 (the number of items in the pretest). That equals .0151 or about 1.5%. This number represents an unreasonable outcome: this shows that the pupils have learned very little from this set. I believe that it cannot provide an adequate answer to our study.

7) <u>Set 5093</u>

- Group balance in term of IRT number by the two conditions (hints versus worked examples)

Row Labels	Hints	WE	Grand Total
0	8	5	13
1	7	6	13
N\A	39	29	68
Grand Total	**54**	**40**	**94**

The above chart says that the groups are balanced, even for the pupils who do not have assigned an IRT number.

- Pretest balance

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Count of PretestAverage
Hints	8

WE	7
Grand Total	**15**

We filtered out the sets that have not been completed and we are left with this result: only 15 from 26. Next, we will analyze if the pretest is balanced on terms of the average on their results.

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	**Average of PretestAverage**
Hints	0.458333333
WE	0.380952381
Grand Total	**0.422222222**

The two conditions are similar between them, in term of the pretests.

- Distribution of the pupils that have an IRT number

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	**Average of Student IRT**
Hints	0.47474775
WE	0.840742571
Grand Total	**0.645545333**

We will now do a T-test to establish if they are different.

- T-test

Row Labels	**Hints**	**WE**
56720	-1.94732	
61865	0.138289	
52078	0.172384	
55188	0.444448	
61867	0.693732	
61629	1.262247	
52641	1.339723	
55856	1.694482	

52616	-0.44325
61880	-0.0801
61687	0.619476
52652	1.210427
61868	1.328245
54341	1.340391
61876	1.91001

The T-test has given the result p = 0.496602 which says that there is 49 % chance that a difference this big would cause us to reject the null hypothesis.

At this point we can conclude that the students are balanced.

- Overall learning

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Set 5093	.000	14	1.000	.00000	-.3625	.3625

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Set 5093	15	.0000	.65465	.16903

Unfortunately, we cannot any conclusion from this set either. We cannot observe a pattern in learning because the mean is 0.

8) Set 5105

- Group balance in term of IRT number by the two conditions (hints versus worked examples)

Row Labels	Hints	WE	Grand Total
0	6	10	16
1	7	7	14
N\A	18	49	67
Grand Total	**31**	**66**	**97**

We can that the students that do not have an IRT number assigned show a large discrepancy in terms of our condition. Consequently, we will leave them out for our purpose and analyze just the students that have assigned a number.

Row Labels	Hints	WE	Grand Total
0	6	10	16
1	7	7	14
Grand Total	**13**	**17**	**30**

The table shows a good balance for our conditions.

- Pretest balance

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Count of PretestAverage
Hints	11
WE	11
Grand Total	**22**

We filtered out the sets that have not been completed and we are left with this result: only 22 from 30. Next, we will analyze if the pretest is balanced on terms of the average on their results.

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of PretestAverage
Hints	0.181818182
WE	0.03030303
Grand Total	**0.106060606**

The pretest results show a quite a difference between the pretests: +/- 7 % from the average. This indicates that students found hints more helpful than worked examples, but let us explore more.

- Distribution of the pupils that have an IRT number

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of Student IRT
Hints	0.199794455
WE	-0.135729182
Grand Total	**0.032032636**

We will now do a T-test to establish if they are different.

- T-test

Row Labels	Hints	WE
59289	-1.25978	
52104	-0.57651	
52109	-0.42401	
52119	-0.3762	
61880	-0.0801	
52110	0.29018	
52103	0.310939	
52116	0.443338	
61687	0.619476	
54341	1.340391	
61876	1.91001	
56720		-1.94732
53584		-0.85332
52108		-0.58987
56582		-0.45445
52616		-0.44325
52115		-0.43087
53959		-0.19645
61865		0.138289
61867		0.693732
61629		1.262247
61868		1.328245

The T-test has given the result p = 0.405723 which says that there is 40 % chance that a difference this big would cause us to reject the null hypothesis.

At this point we can conclude that the students are balanced.

- Overall learning

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Set 5105	.271	21	.789	.04545	-.3028	.3937

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Set 5105	22	.0455	.78542	.16745

As we can see, the overall learning is about .0455 divided by 3 (the number of items in the pretest). That equals .0151 or about 1.5%. This number represents an unreasonable outcome: this shows that the pupils have learned very little from this set. I believe that it cannot provide an adequate answer to our study.

9) <u>Set 5106</u>

- Group balance in term of IRT number by the two conditions (hints versus worked examples)

Row Labels	Hints	WE	Grand Total
0	9	8	17
1	11	7	18
N\A	33	34	67
Grand Total	**53**	**49**	**102**

The above chart says that the groups are balanced, even for the pupils who do not have assigned an IRT number.

- Pretest balance

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Count of PretestAverage
Hints	14
WE	5
Grand Total	**19**

We filtered out the sets that have not been completed and we are left with this result: only 19 from 35. Next, we will analyze if the pretest is balanced on terms of the average on their results.

IRT_isHigh	(Multiple Items)
completeOrNot	complete

Row Labels	Average of PretestAverage
Hints	0.119047619
WE	0.333333333
Grand Total	**0.175438596**

In this set, the pretests are further apart from each other. This is due, in part, to the fact that the pool of students is getting smaller with each set.

At this position, I feel that this set 5106 and 5107 cannot provide any reliable information for our study. Set 5107 has only 23 sequences that are complete and the distribution by condition (hints vs. WE) is not equal.

Conclusions for Moving Straight Ahead:

1. The sets from the Moving Straight Ahead curriculum have not been run enough in schools to provide a more precise finding for our research.
2. The sets that have a good reliability show that problems with hints have provided a slightly better learning for the students.
3. In almost all sets, if we don't count the students who did not have an IRT number, there is a balance between the sequences with hints and sequences

with worked examples. This will provide a good base for further studies on the same topic.

9. CONCLUSIONS

For all the sets in both "Stretching and Shrinking" and "Moving Straight Ahead", we can see that there is learning from both hints and worked-out examples. Unfortunately, we cannot conclude whether hints are more effective than worked-out examples, or vice versa. We hope that this project will help future students to understand the necessary concepts and give them a good starting ground for experiments. It is clear that the Assistment system will provide more data in the future which we hope will be more conclusive to discover the true effective methodology between hints and worked-out examples.

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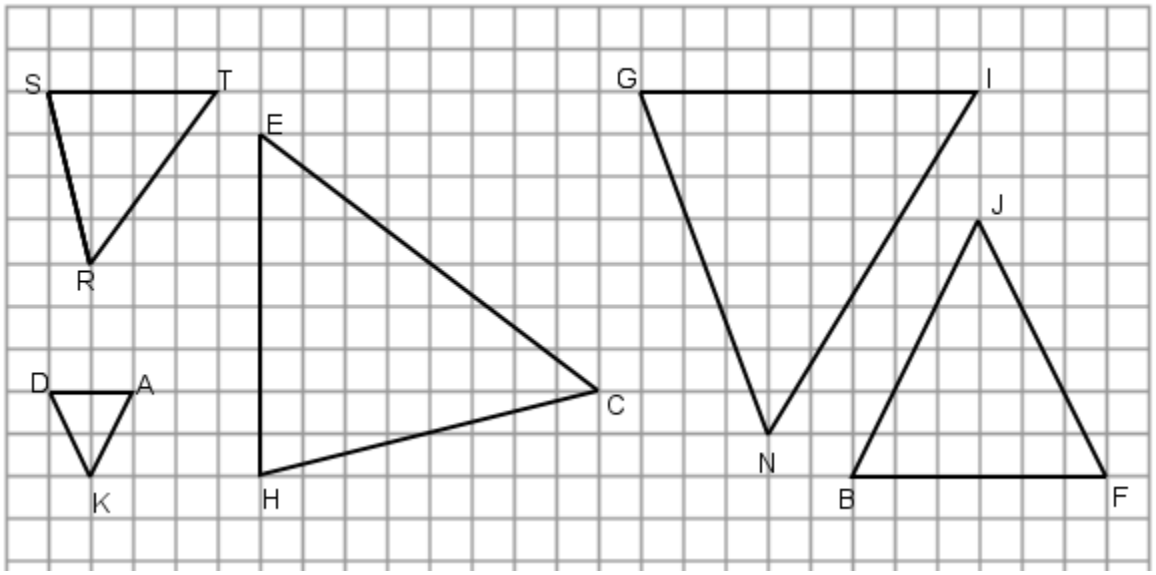
8. Razzaq, L., Feng, M., Nuzzo-Jones, G., Heffernan, N.T., Koedinger, K. R., Junker, B., Ritter, S., Knight, A., Aniszczyk, C., Choksey, S., Livak, T., Mercado, E., Turner, T.E., Upalekar. R, Walonoski, J.A., Macasek. M.A., Rasmussen, K.P. (2005). The Assistment Project: Blending Assessment and Assisting. In C.K. Looi, G. McCalla, B. Bredeweg, & J. Breuker (Eds.) *Proceedings of the 12th International Conference on Artificial Intelligence In Education*, 555-562. Amsterdam: ISO Press.

Assistment

Assistment #14137

You are previewing content.

Which triangle above is similar to STR?



Comment on this question

Note DAK and JBF are both isoceles, but STR is not. So they cannot be similar.

Comment on this hint

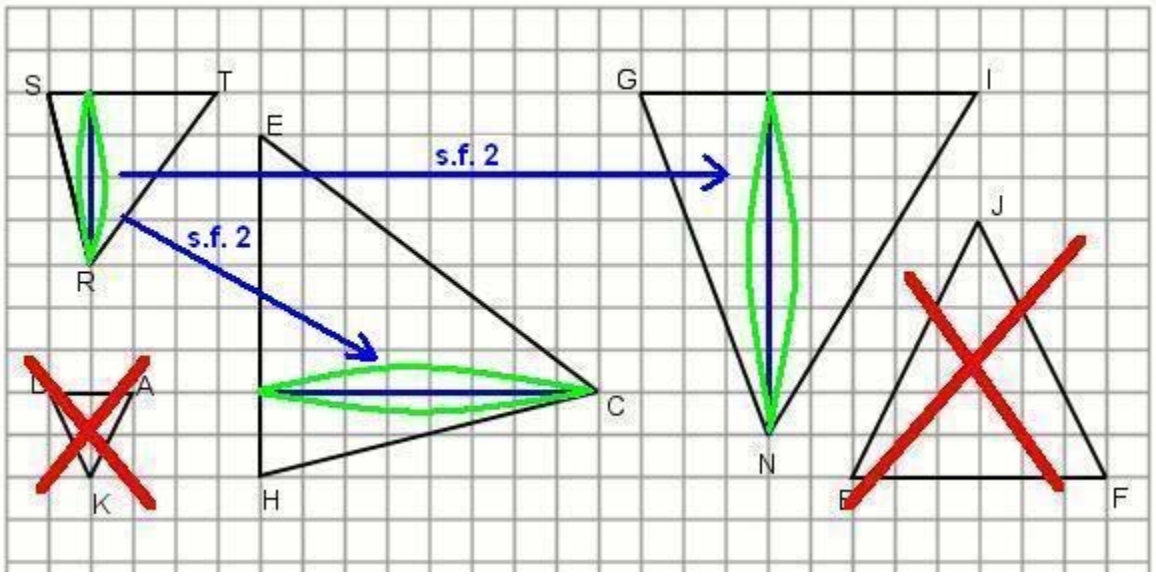
This leaves HEC and GIN. Use the grid to compare STR to both HEC and GIN.

Find the smallest sides of each triangle and draw heights to those sides. Look if you can find two triangles with the same ratio.

Comment on this hint

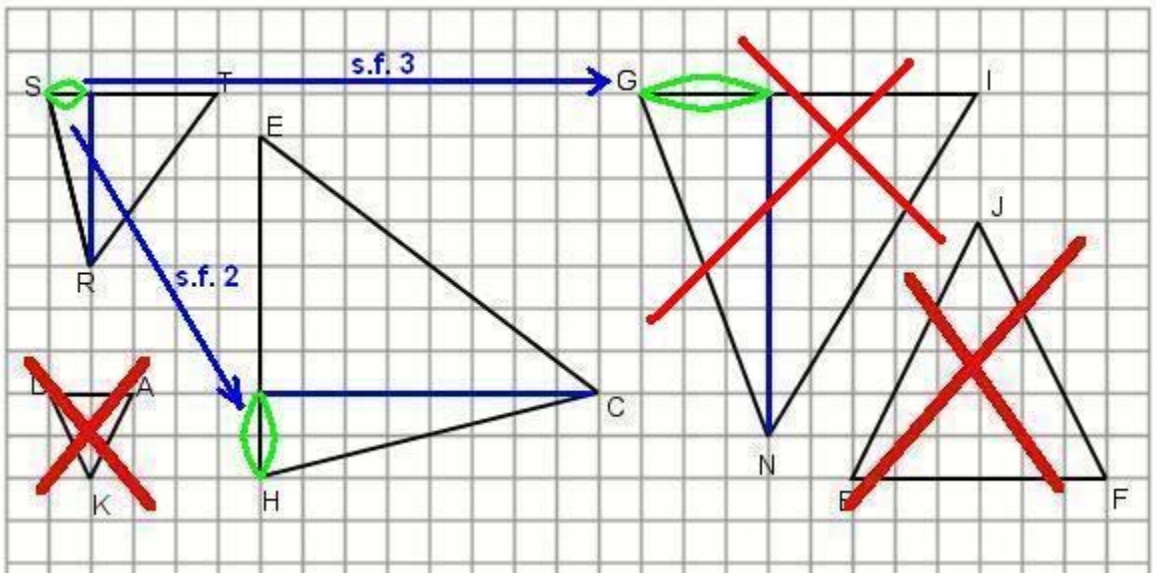
In both triangles HEC and GIN, we have heights that are twice as long as the hieight in STR.

For two triangles to be similar, all parts should have the same scale factor. Look if you can determine which of the two triangles is similar to STR.



Comment on this hint

As you can see on the picture below, the smaller part of the side GI of triangle GIN is three times as long as the corresponding part in triangle STR, so it cannot be the answer.



The triangle similar to STR is HEC. Please choose answer B.

Comment on this hint

Select one:

- A. DAK
- B. HEC
- C. GIN
- D. BFJ

Submit Answer

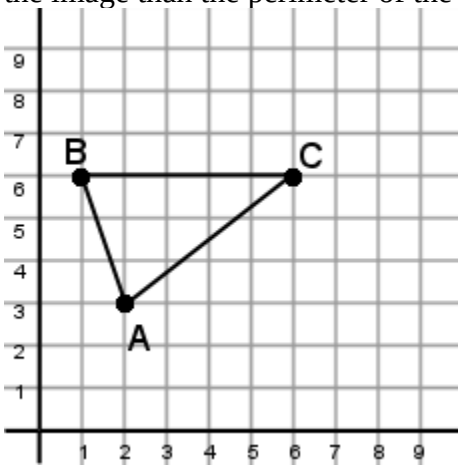
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #14138

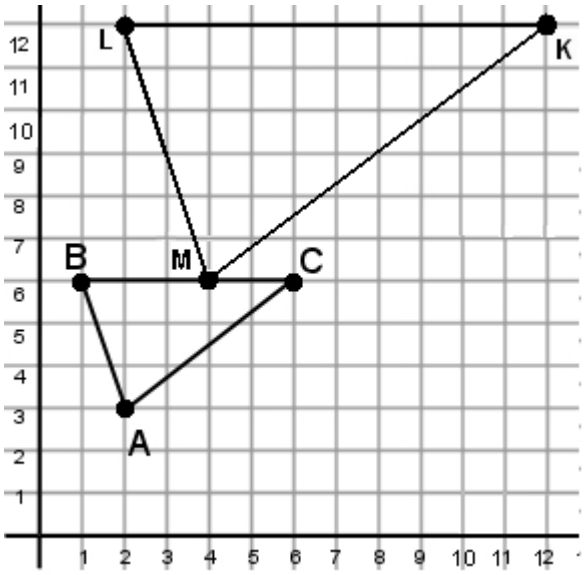
You are previewing content.

If the rule (2x, 2y) is applied to the triangle ABC in the figure, how many times larger is the perimeter of the image than the perimeter of the original?



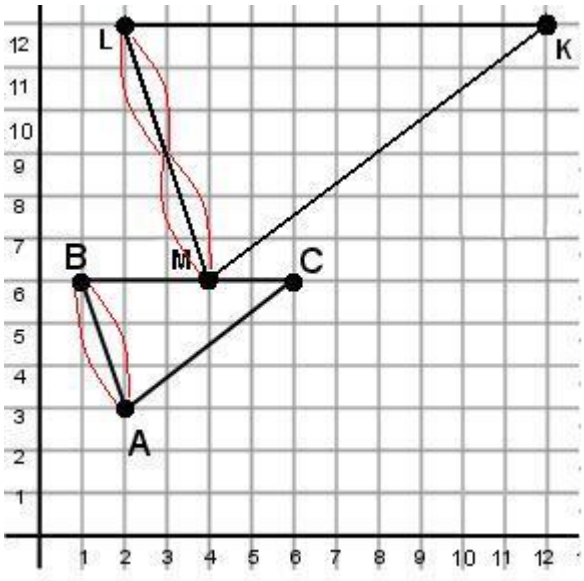
Comment on this question

We applied the 2x,2y rule to the triangle ABC, and we got the new triangle MLK. How many lenghts of AB is ML?



Comment on this hint

ML is 2 times AB. Think about the other corresponding sides: BC-LK, CA-KM. What is the scale factor?



Comment on this hint

The scale factor is 2 for all the sides. So the perimiter will be twice as long, too.

The answer is 2. Type in 2.

Comment on this hint

Type your answer below:

- 2

Submit Answer

Correct!
You are done with this problem!

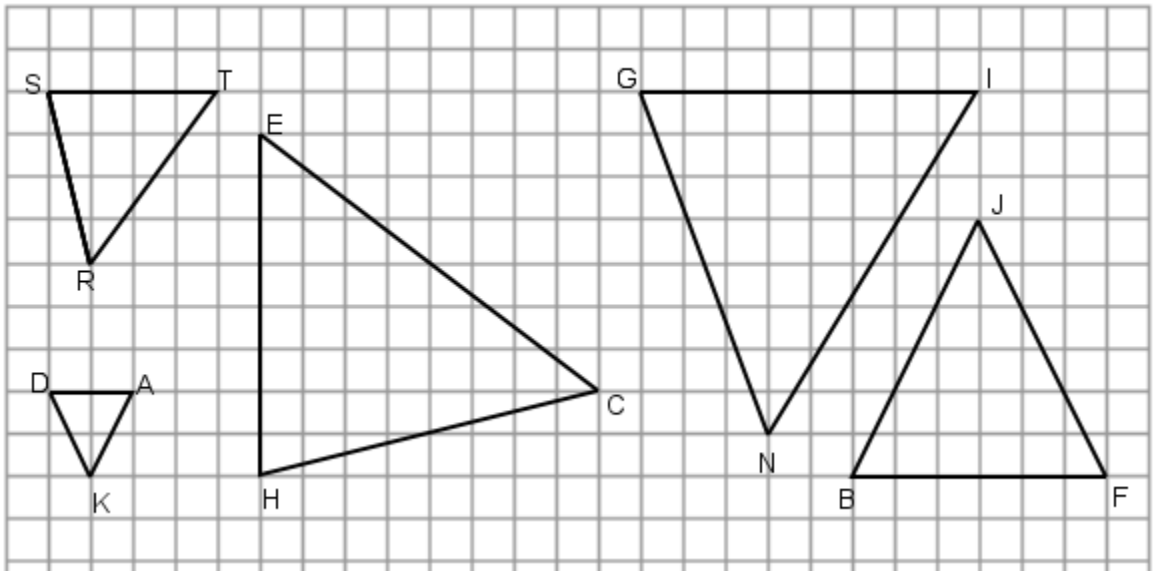
Comment on this problem

Assistment

Assistment #14139

You are previewing content.

Now that we know STR and HEC are similar. What side corresponds to SR in triangle HEC?



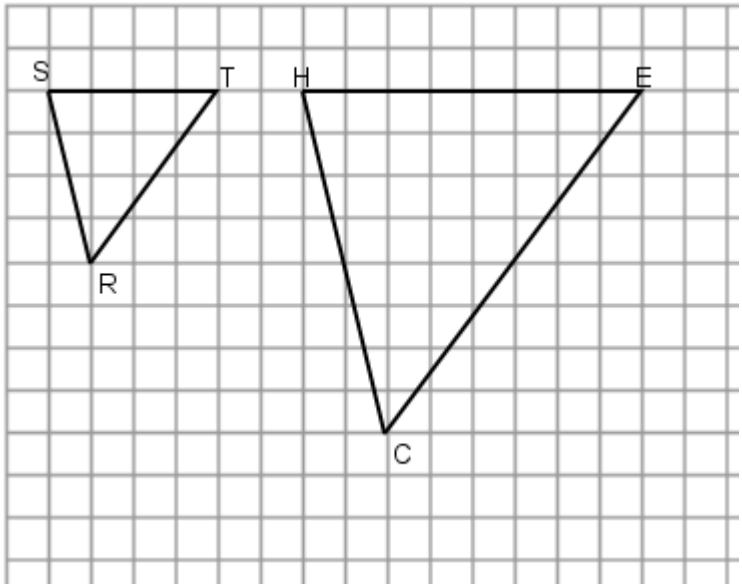
Comment on this question

In may help to draw HEC reoriented to match STR on a piece of paper. Rotate HEC so it is lined up on the grid so that it is just like the triangle STR, but stretched.

Be careful not to mix up the letters!

Comment on this hint

Below is a drawing with HEC rotated. Can you see which sides are corresponding now?



Comment on this hint

Since the shortest side SR matches with the shortest side HC, they are corresponding. Select C. HC

Comment on this hint

Select one:

- A. EH
- B. CE
- C. HC
- D. Cannot be determined

Submit Answer

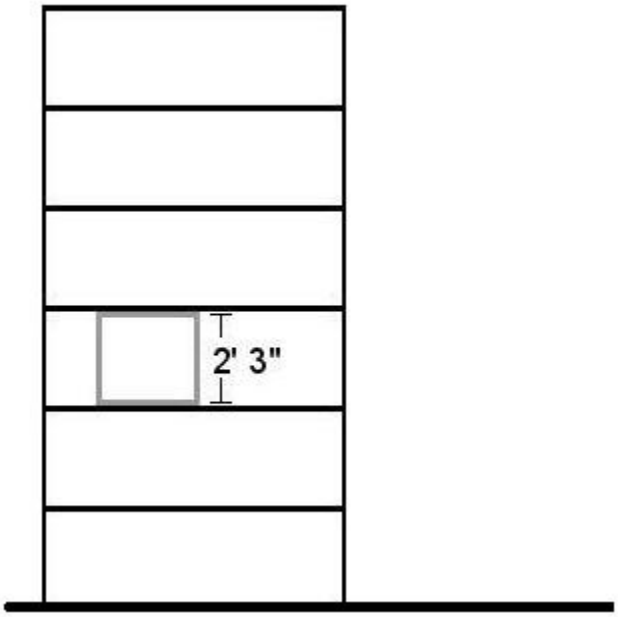
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #14140

You are previewing content.

A box was on a shelf in a big warehouse as shown above. The box was 2 feet 3 inches tall. The box fits perfectly height-wise in one of the alcoves and each alcove has the same width and height. About how many feet tall is the warehouse shelf?



Comment on this question

Because the box sits perfectly height-wise on the shelf, we can assume that to be the height of the alcove. There are 6 alcoves, so multiply the height of box by 6. Be mindful of conversion from inches to feet and feet back to inches.

Comment on this hint

$$\begin{aligned} &\textit{Feet}: 2*6 = 12 \text{ feet} \\ &\textit{Inches}: 3*6 = 18 \text{ inches} = 12 \text{ inches} + 6 \text{ inches} \\ &\qquad\qquad = 1 \text{ foot and } 6 \text{ inches} \end{aligned}$$

And so,

$$12 + 1 \text{ feet and } 6 \text{ inches} = 13 \text{ feet } 6 \text{ inches}$$

Comment on this hint

13 feet 6 inches is 13' 6" so select A. 13' 6"

Comment on this hint

Select one:

- A. 13' 6"
- B. 12' 5"

- C. 13' 8"
- D. 15'

Submit Answer

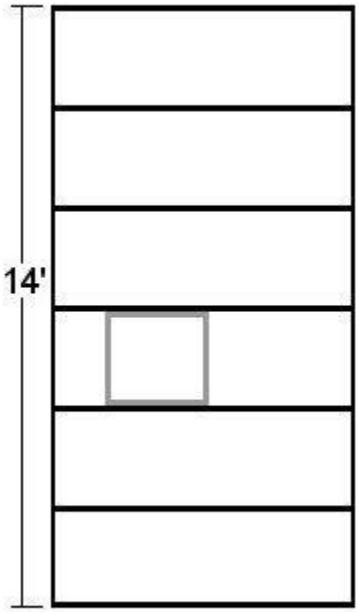
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #14141

You are previewing content.

A warehouse shelf is 14 feet tall and is divided into 6 equally sized alcoves. A box sits perfectly height-wise in one of the alcoves. How tall is the box sitting on the shelf in feet and inches?



Comment on this question

The box fits perfectly in the alcove height-wise, so the height of the alcove is the same as the height of the box. Divide the height of the whole shelf by 6, because there are 6 alcoves. This will be the height of the box.

Comment on this hint

$$14 : 6 = \frac{14}{6} = 2\frac{1}{3}$$

So that's 2 feet plus another $\frac{1}{3}$ of a foot.

What is $\frac{1}{3}$ of a foot in inches?

Comment on this hint

$$\text{To find } \frac{1}{3} \text{ of a foot in inches :}$$

$$12 * \frac{1}{3} = 4 \text{ inches}$$

Comment on this hint

Together we have 2 feet and 4 inches, so select C. 2 ft. 4 in.

Comment on this hint

Select one:

- A. 3 ft. 5 in.
- B. 2 ft. 2 in.
- C. 2 ft. 4 in.
- D. 3 ft. 4 in.

Submit Answer

That is not correct, try again.

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #14142

You are previewing content.

What is 120% of 40?

Comment on this question

To find 120% of 40, find 1.2 * 40

Comment on this hint

1.2 * 40 = 48

Comment on this hint

The correct answer is 48. Please enter 48

Comment on this hint

Type your answer below:

- 48

Submit Answer

Correct!

You are done with this problem!

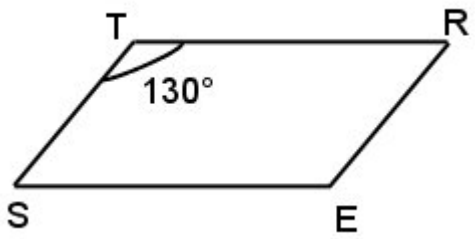
Comment on this problem

Assistment

Assistment #14156

You are previewing content.

What is the measure of angle R?

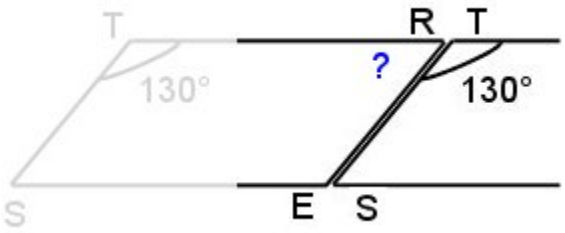


Comment on this question

Adjacent angles in a parallelogram are supplementary (add up to 180 degrees)

Comment on this hint

By cutting the parallelogram in half and rearranging it, we see that the angle R and the angle T make an angle of 180?.



Comment on this hint

So, 130 + ? = 180

What should ? be?

Comment on this hint

? = 50, so type in 50

Comment on this hint

Type your answer below (mathematical expression):

- 50

Submit Answer

Correct!

You are done with this problem!

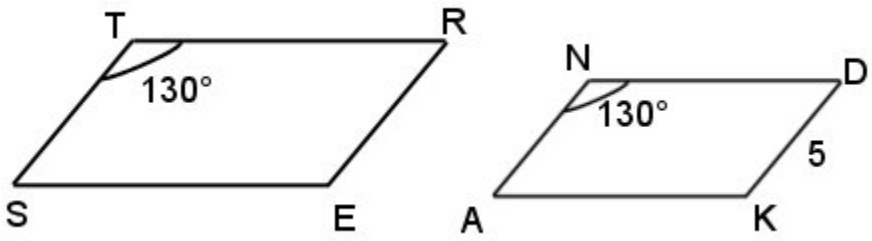
Comment on this problem

Assistment

Assistment #14157

You are previewing content.

If we know the area of STRE is 9 times that of ANDK, what is the measure of ER? (Picture is not drawn to scale)

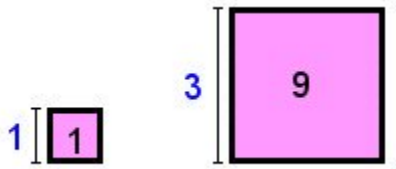


Comment on this question

The two parallelograms are similar since they are both parallelograms and have a common angle of 130 degrees.

Comment on this hint

When the area of a figure is 9 times as large the scale factor is 3. Refer to the picture above involving squares.



Comment on this hint

If the scale factor from the smaller parallelogram to the larger is 3, what is the measure of ER?

Comment on this hint

Since the scale factor is 3 from the small parallelogram to the large parallelogram we can multiply the side of the small parallelogram by 3 to get the measure of the side of the large parallelogram.
3 * 5 = 15. Type in 15.

Comment on this hint

Type your answer below (mathematical expression):

- 15

Submit Answer

Correct!
You are done with this problem!

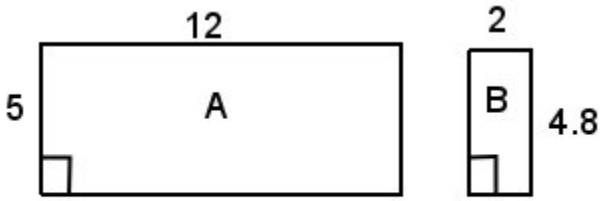
Comment on this problem

Assistment

Assistment #14160

You are previewing content.

Parallelogram A and B are similar. What is the scale factor from rectangle **B to A**?



Comment on this question

Notice that the side of value 2 corresponds to the side of value 5. Also, the side of value 4.8 corresponds to the side of value 12.

Comment on this hint

Another way to see scale factor here is asking how much would you multiply a side of B by to get the corresponding side of A?

(Since we are looking at how B scales up to A, we notice that A is bigger than B. This means that the scale factor will be greater than 1)

Comment on this hint

For these rectangles we ask what do we multiply by 2 to get 5 and does that same number multiply by 4.8 to get 12? We are looking for 2 * x = 5.

Comment on this hint

Because of fact families, we know 2 * x = 5, we know that x = 5 / 2 = 2. 5

We can check this

2 * 2.5 = 5 and 4.8 * 2.5 = 12

So the scale factor is 2.5. Please type in 2.5

Comment on this hint

Type your answer below (mathematical expression):

- 2.5

Submit Answer

Correct!
You are done with this problem!

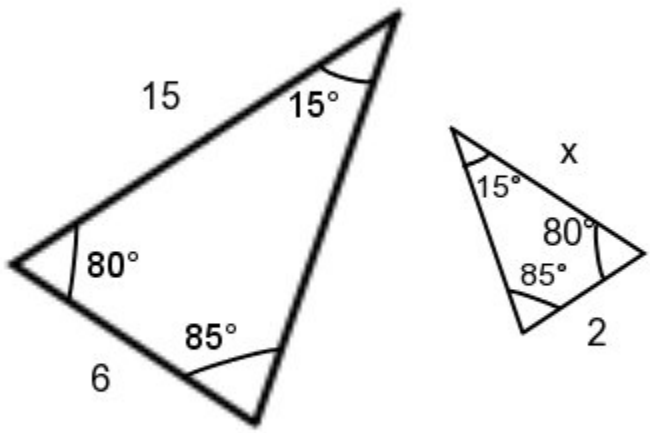
Comment on this problem

Assistment

Assistment #14161

You are previewing content.

The two triangles are similar. Find the length of the missing side, x.



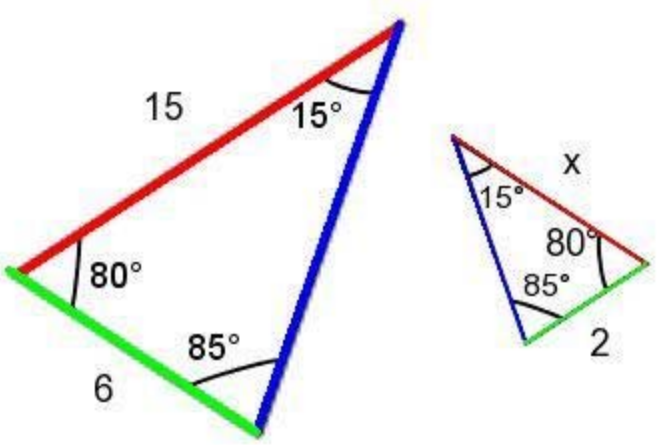
Comment on this question

We need to find the scale factor from the large triangle to the small one. Since the triangle gets smaller we know the scale factor will be less than 1.

Comment on this hint

Check which sides of the triangles correspond by using the equal angles.

For example, the sides, which are across from the 80 degree angle are corresponding, so are the ones opposite the 85 degree angles.



Comment on this hint

Now we can use the two green corresponding sides (the ones opposit 15 degrees) to find the scale factor since we know their lenghts.

In the smaller triangle the side is 2 units and in the bigger one it's 6 units.

So the scale factor is 2/6 = 1/3.

Comment on this hint
Now we can use the scale factor of 1/3 to find the missing side length.
Comment on this hint

15 units * 1/3 = 5 units

So x=5 units. Type in 5.

Comment on this hint

Type your answer below (mathematical expression):

- 5

Submit Answer

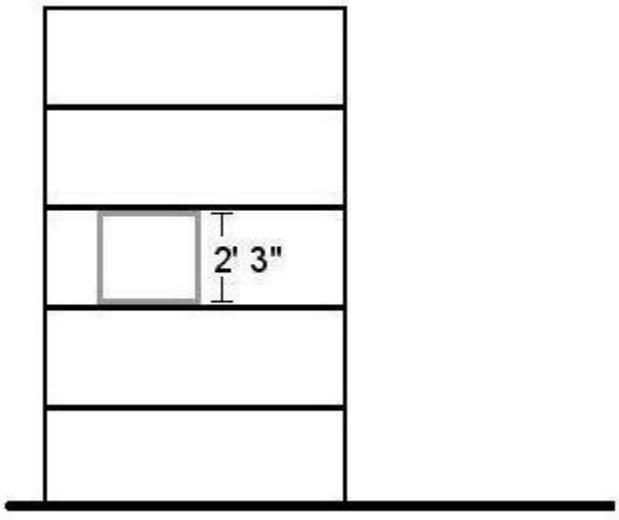
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25008

You are previewing content.

A box was on a shelf in a big warehouse as shown above. The box was 2 feet 3 inches tall. The box fits perfectly height-wise in one of the alcoves and each alcove has the same width and height. About how many feet tall is the warehouse shelf?



Comment on this question

Because the box sits perfectly height-wise on the shelf, we can assume that to be the height of the alcove. There are 5 alcoves, so multiply the height of box by 5. Be mindful of conversion from inches to feet and feet back to inches.

Comment on this hint

$$\textit{Feet}: 2 * 5 = 10 \text{ feet}$$

$$\textit{Inches}: 3 * 5 = 15 \text{ inches} = 12 \text{ inches} + 3 \text{ inches}$$

$$= 1 \text{ foot and } 3 \text{ inches}$$

And so,

$$10 + 1 \text{ feet and } 3 \text{ inches} = 11 \text{ feet } 3 \text{ inches}$$

Comment on this hint

11 feet 3 inches is 11' 3" so select B. 11' 3"

Comment on this hint

Select one:

- A. 12' 5"
- B. 11' 3"

- C. 13' 8"
- D. 15'

Submit Answer

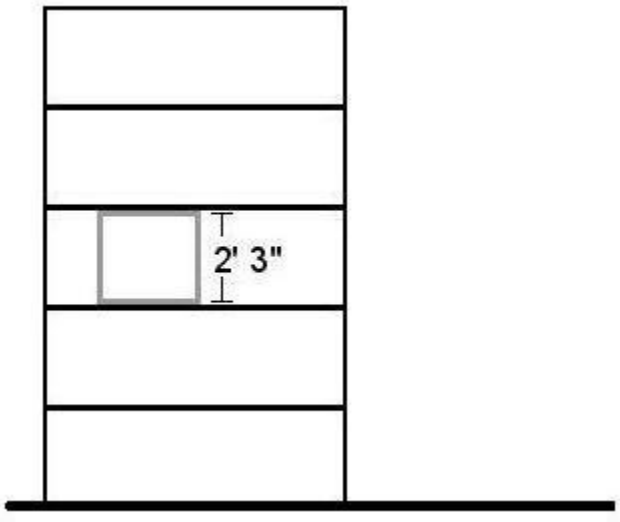
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25013

You are previewing content.

A box was on a shelf in a big warehouse as shown above. The box was 2 feet 3 inches tall. The box fits perfectly height-wise in one of the alcoves and each alcove has the same width and height. About how many feet tall is the warehouse shelf?



Comment on this question

Request Help

Select one:

- A. 12' 5"
- B. 11' 3"
- C. 13' 8"
- D. 15'

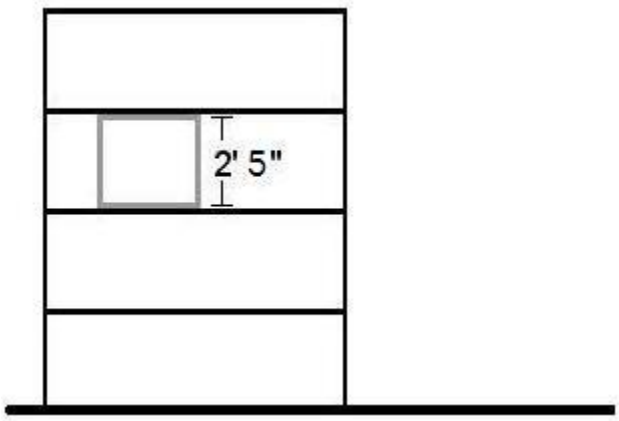
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

A box was on a shelf in a big warehouse as shown above. The box was 2 feet 5 inches tall. The box fits perfectly height-wise in one of the alcoves and each alcove has the same width and height. About how many feet tall is the warehouse shelf?



Solution:

Because the box sits perfectly height-wise on the shelf, we can assume that to be the height of the alcove. There are 5 alcoves, so multiply the height of box by 5. Be mindful of conversion from inches to feet and feet back to inches.

Feet : 2*4 = 8 feet

Inches : 5 * 4 = 20 inches = 12 + 8 inches
= 1 foot 8 inches

And so,

8 + 1 foot 8 inches = 9 feet 8 inches

9 feet 8 inches is 9' 8" so the answer is 9' 8"

Comment on this question

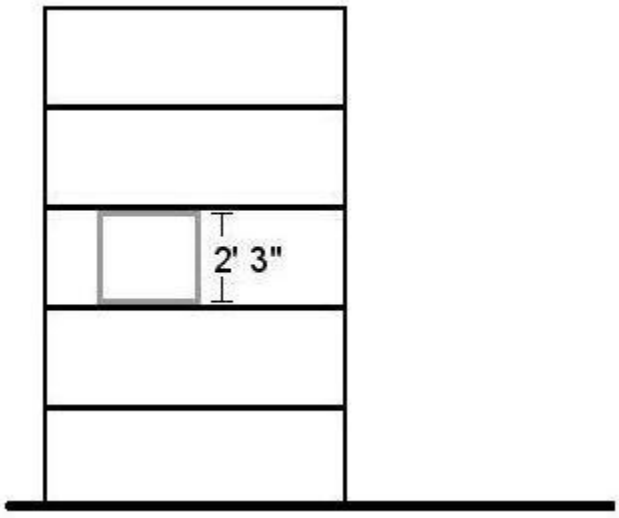
Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!
Now try the original problem again. You may look back at the worked example if that helps you.

A box was on a shelf in a big warehouse as shown above. The box was 2 feet 3 inches tall. The box fits perfectly height-wise in one of the alcoves and each alcove has the same width and height. About how many feet tall is the warehouse shelf?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 11' 3", please select B. 11' 3".

Comment on this hint

Select one:

- A. 12' 5"
- B. 11' 3"
- C. 13' 8"
- D. 15'

Submit Answer

Correct!

You are done with this problem!

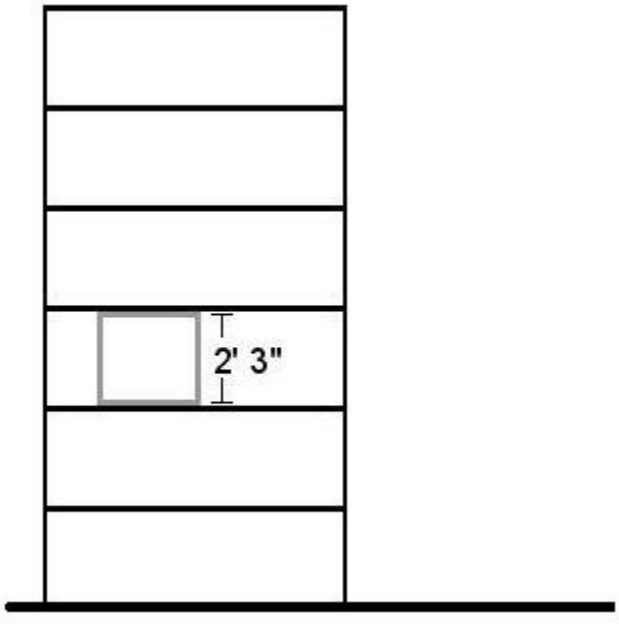
Comment on this problem

Assistment

Assistment #25265

You are previewing content.

A box was on a shelf in a big warehouse as shown above. The box was 2 feet 3 inches tall. The box fits perfectly height-wise in one of the alcoves and each alcove has the same width and height. About how many feet tall is the warehouse shelf?



Comment on this question

Request Help

Select one:

- A. 13' 6"
- B. 12' 5"
- C. 13' 8"
- D. 15'

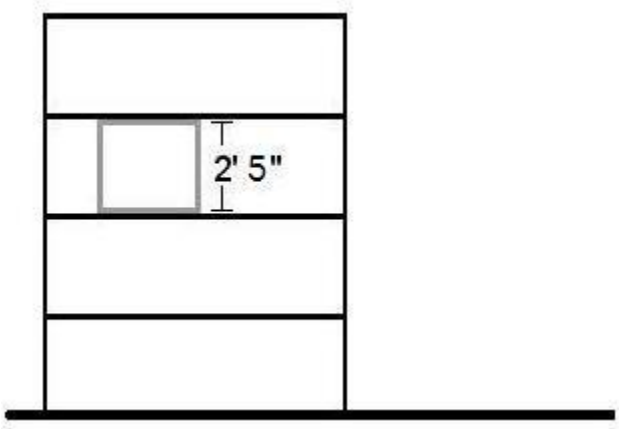
Submit Answer

Let's move on and figure out this problem
Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

A box was on a shelf in a big warehouse as shown above. The box was 2 feet 5 inches tall. The box fits

perfectly height-wise in one of the alcoves and each alcove has the same width and height. About how many feet tall is the warehouse shelf?



Solution:

Because the box sits perfectly height-wise on the shelf, we can assume that to be the height of the alcove. There are 5 alcoves, so multiply the height of box by 5. Be mindful of conversion from inches to feet and feet back to inches.

Feet : 2*4 = 8 feet

Inches : 5 * 4 = 20 inches = 12 + 8 inches
= 1 foot 8 inches

And so,

8 + 1 foot 8 inches = 9 feet 8 inches

9 feet 8 inches is 9' 8" so the answer is 9' 8"

Comment on this question

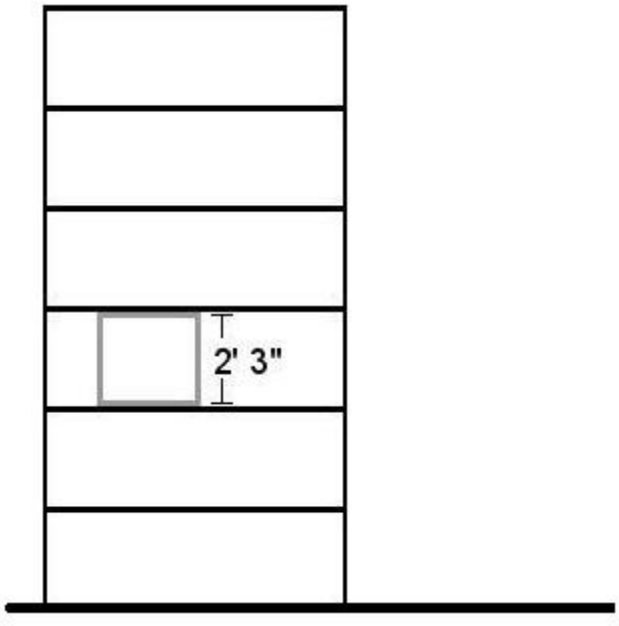
Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!
Now try the original problem again. You may look back at the worked example if that helps you.

A box was on a shelf in a big warehouse as shown above. The box was 2 feet 3 inches tall. The box fits perfectly height-wise in one of the alcoves and each alcove has the same width and height. About how many feet tall is the warehouse shelf?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 13' 6". Please select A. 13' 6"

Comment on this hint

Select one:

- A. 13' 6"
- B. 12' 5"
- C. 13' 8"
- D. 15'

Submit Answer

Correct!

You are done with this problem!

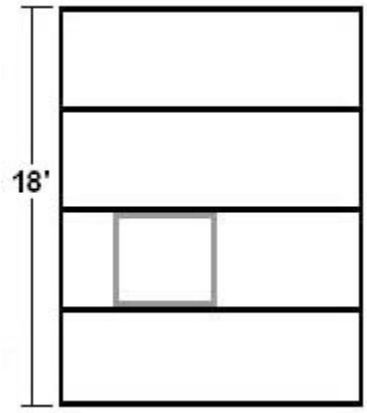
Comment on this problem

Assistment

Assistment #25313

You are previewing content.

A warehouse shelf is 18 feet tall and is divided into 4 equally sized alcoves. A box sits perfectly height-wise in one of the alcoves. How tall is the box sitting on the shelf in feet and inches?



Comment on this question

The box fits perfectly in the alcove height-wise, so the height of the alcove is the same as the height of the box. Divide the height of the whole shelf by 4, because there are 4 alcoves. This will be the height of the box.

Comment on this hint

$$18 : 4 = \frac{18}{4} = 4\ \frac{1}{2}$$

So that's 4 feet plus another $\frac{1}{2}$ of a foot.

What is $\frac{1}{2}$ of a foot in inches?

Comment on this hint

To find $\frac{1}{2}$ of a foot in inches :

$12 * \frac{1}{2} = 6$ inches

Comment on this hint

Together we have 4 feet and 6 inches, so select B. 4 ft. 6 in.

Comment on this hint

Select one:

- A. 5 ft. 5 in.
- B. 4 ft. 6 in.
- C. 3 ft. 6 in.
- D. 4 ft. 0 in.

Submit Answer

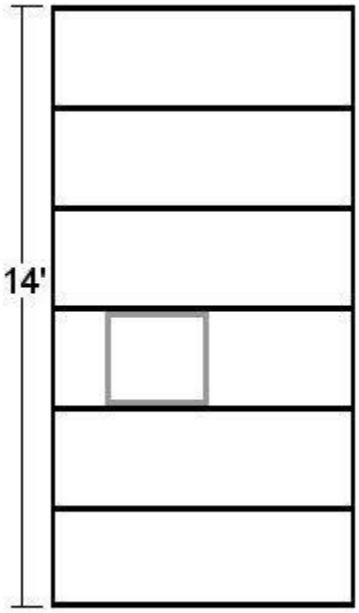
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25314

You are previewing content.

A warehouse shelf is 14 feet tall and is divided into 6 equally sized alcoves. A box sits perfectly height-wise in one of the alcoves. How tall is the box sitting on the shelf in feet and inches?



Comment on this question

Request Help

Select one:

- A. 3 ft. 5 in.
- B. 2 ft. 2 in.
- C. 2 ft. 4 in.
- D. 3 ft. 4 in.

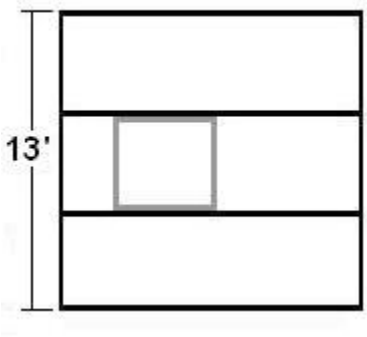
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

A warehouse shelf is 13 feet tall and is divided into 3 equally sized alcoves. A box sits perfectly height-wise in one of the alcoves. How tall is the box sitting on the shelf in feet and inches?



Solution:

The box fits perfectly in the alcove height-wise, so the height of the alcove is the same as the height of the box. Divide the height of the whole shelf by 3, because there are 3 alcoves. This will be the height of the box.

$$13 : 3 = \frac{13}{3} = 4\ \frac{1}{3}$$

So that's 4 feet plus another $\frac{1}{3}$ of a foot.

What is $\frac{1}{3}$ of a foot in inches?

To find $\frac{1}{3}$ of a foot in inches :

$$12 * \frac{1}{3} = 4 \text{ inches}$$

Together we have 4 feet and 4 inches, so the answer is 4 ft. 4 in.

Comment on this question

Select one:

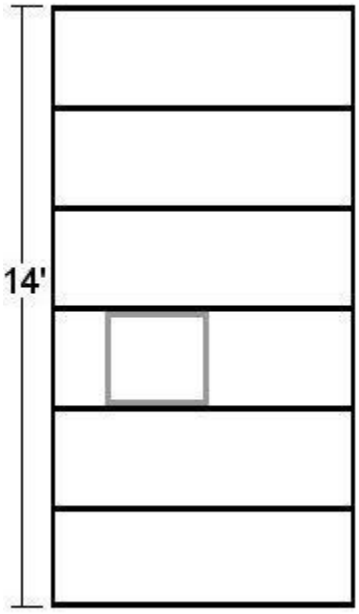
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

A warehouse shelf is 14 feet tall and is divided into 6 equally sized alcoves. A box sits perfectly height-wise in one of the alcoves. How tall is the box sitting on the shelf in feet and inches?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 2 ft. 4 in.. Please select C. 2 ft. 4 in.

Comment on this hint

Select one:

- A. 3 ft. 5 in.
- B. 2 ft. 2 in.
- C. 2 ft. 4 in.
- D. 3 ft. 4 in.

Submit Answer

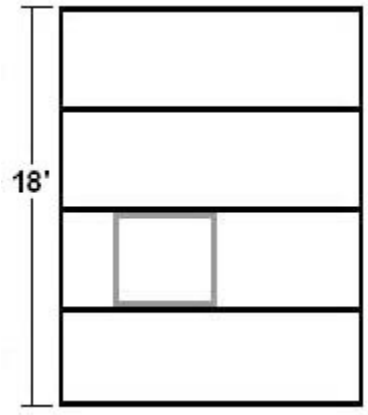
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25315

You are previewing content.

A warehouse shelf is 18 feet tall and is divided into 4 equally sized alcoves. A box sits perfectly height-wise in one of the alcoves. How tall is the box sitting on the shelf in feet and inches?



Comment on this question

Request Help

Select one:

- A. 5 ft. 5 in.
- B. 4 ft. 6 in.
- C. 3 ft. 6 in.
- D. 4 ft. 0 in.

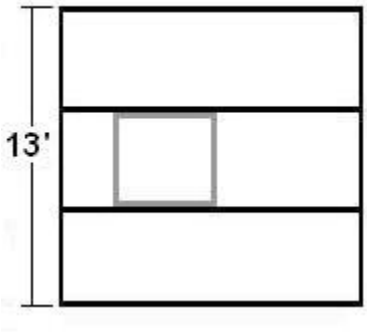
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

A warehouse shelf is 13 feet tall and is divided into 3 equally sized alcoves. A box sits perfectly height-wise in one of the alcoves. How tall is the box sitting on the shelf in feet and inches?



Solution:

The box fits perfectly in the alcove height-wise, so the height of the alcove is the same as the height of the box. Divide the height of the whole shelf by 3, because there are 3 alcoves. This will be the height of the box.

$13 : 3 = \frac{13}{3} = 4\ \frac{1}{3}$

So that's 4 feet plus another $\frac{1}{3}$ of a foot.

What is $\frac{1}{3}$ of a foot in inches?

To find $\frac{1}{3}$ of a foot in inches :

$12 * \frac{1}{3} = 4$ inches

Together we have 4 feet and 4 inches, so the answer is 4 ft. 4 in.

Comment on this question

Select one:

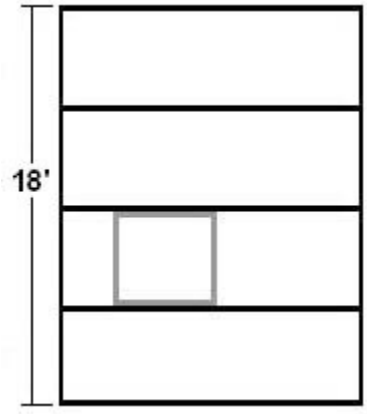
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

A warehouse shelf is 18 feet tall and is divided into 4 equally sized alcoves. A box sits perfectly height-wise in one of the alcoves. How tall is the box sitting on the shelf in feet and inches?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 4 ft. 6 in.. Please select B. 4 ft. 6 in.

Comment on this hint

Select one:

- A. 5 ft. 5 in.
- B. 4 ft. 6 in.
- C. 3 ft. 6 in.
- D. 4 ft. 0 in.

Submit Answer

Correct!
You are done with this problem!

Comment on this problem

Assistment

Assistment #25376

You are previewing content.

What is 140% of 20?

Comment on this question

To find 140% of 20, find 1.4 * 20

Comment on this hint

1.4 * 20 = 28

Comment on this hint

The correct answer is 28. Please enter 28

Comment on this hint

Type your answer below (mathematical expression):

- 28

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25377

You are previewing content.

What is 120% of 40?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

What is 160% of 50?

Solution:

To find 160% of 50, find 1.6 * 50

1.6 * 50 = 80

The correct answer for this problem is 80.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is 120% of 40?

Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 48. Please enter 48

Comment on this hint

Type your answer below (mathematical expression):

- 48

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25379

You are previewing content.

What is 140% of 20?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

What is 160% of 50?

Solution:

To find 160% of 50, find 1.6 * 50

1.6 * 50 = 80

The correct answer for this problem is 80.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is 140% of 20?

Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question
The correct answer is 28. Please enter 28
Comment on this hint

Type your answer below (mathematical expression):

- 28

Submit Answer

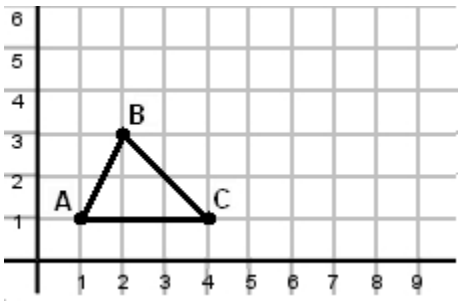
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25459

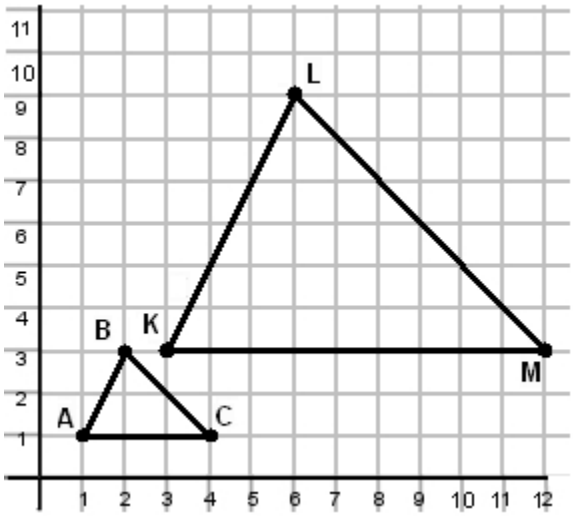
You are previewing content.

If the rule (3x, 3y) is applied to the triangle ABC in the figure, how many times larger is the perimeter of the image than the perimeter of the original?



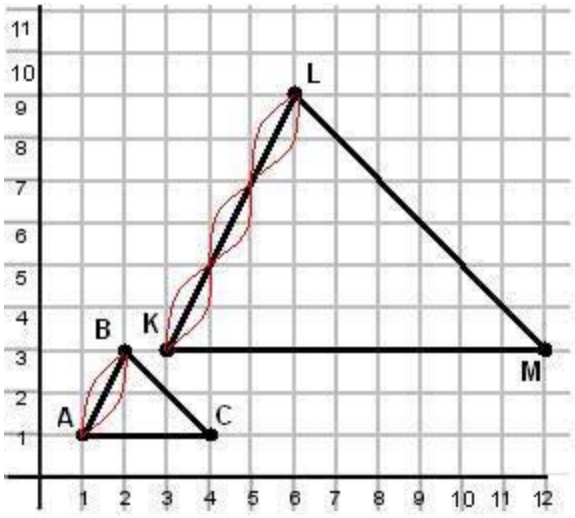
Comment on this question

We applied the 3x,3y rule to the triangle ABC, and we got the new triangle KLM. How many lenghts of AB is KL?



Comment on this hint

KL is 3 times AB. Think about the other corresponding sides: BC-LM, CA-MK. What is the scale factor?



Comment on this hint

The scale factor is 3 for all the sides. So the perimiter will be three times as long, too.

The answer is 3. Type in 3.

Comment on this hint

Type your answer below (mathematical expression):

- 3

Submit Answer

Correct!
You are done with this problem!

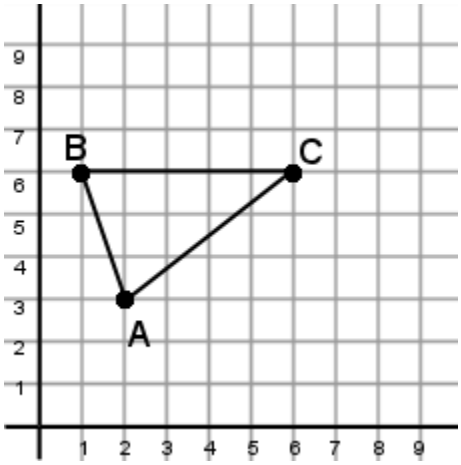
Comment on this problem

Assistment

Assistment #25461

You are previewing content.

If the rule (2x, 2y) is applied to the triangle ABC in the figure, how many times larger is the perimeter of the image than the perimeter of the original?



Comment on this question

Request Help

Type your answer below (mathematical expression):

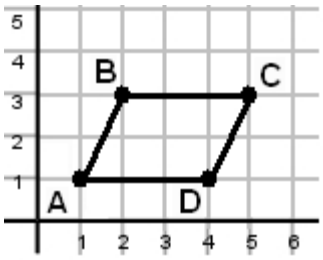
-

Submit Answer

Let's move on and figure out this problem
Let's look at the solution for a problem **similar** to the one in the red box above:

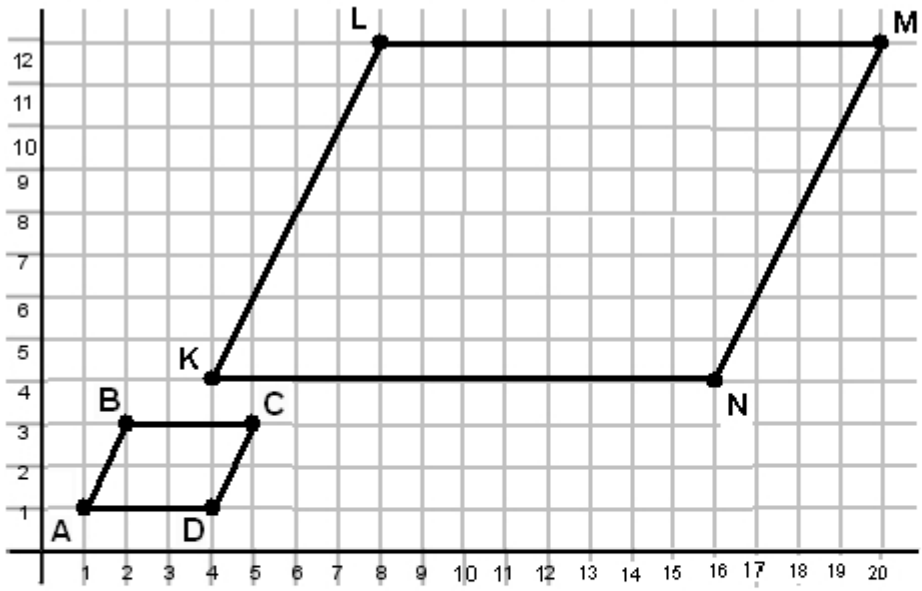
Problem:

If the rule (4x, 4y) is applied to the parallelogram ABCD in the figure, how many times larger is the perimeter of the image than the perimeter of the original?

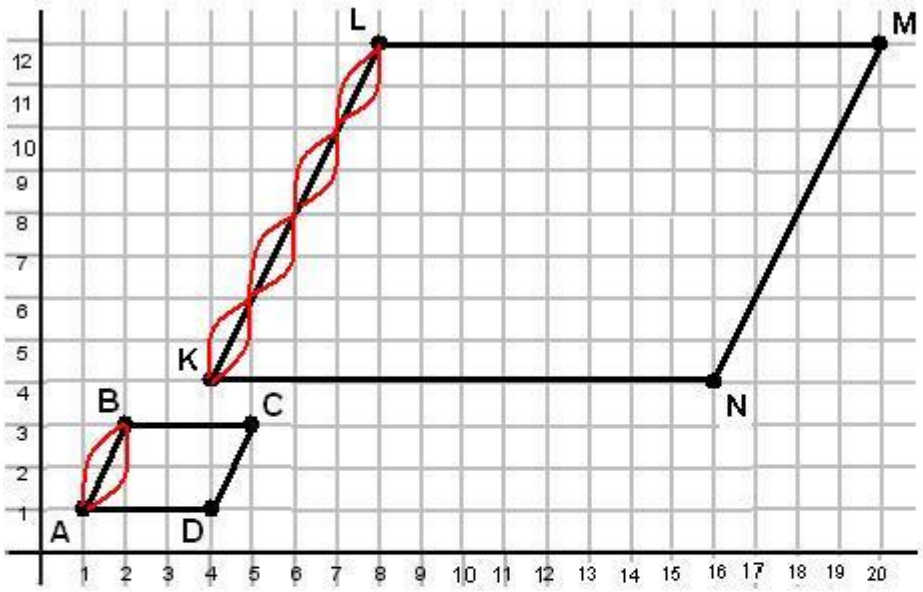


Solution:

We applied the 4x,4y rule to the parallelogram ABCD, and we got the new parallelogram KLMN. How many lenghts of AB is KL?



KL is 4 times AB. Think about the other corresponding sides: BC-LM, CD-MN, DA-NK. What is the scale factor?



The scale factor is 4 for all the sides. So the perimiter will be four time as long, too.

The answer is 4.

Comment on this question

Select one:

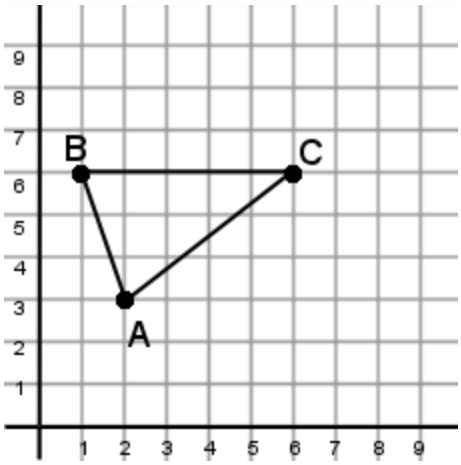
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

If the rule (2x, 2y) is applied to the triangle ABC in the figure, how many times larger is the perimeter of the image than the perimeter of the original?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 2. Please, type in 2

Comment on this hint

Type your answer below (mathematical expression):

- 2

Submit Answer

Correct!
You are done with this problem!

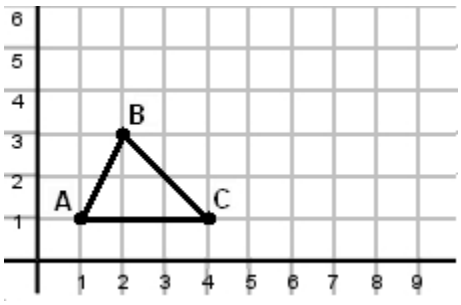
Comment on this problem

Assistment

Assistment #25462

You are previewing content.

If the rule (3x, 3y) is applied to the triangle ABC in the figure, how many times larger is the perimeter of the image than the perimeter of the original?



Comment on this question

Request Help

Type your answer below (mathematical expression):

-

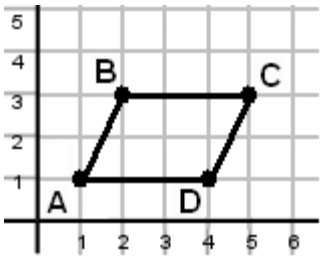
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem **similar** to the one in the red box above:

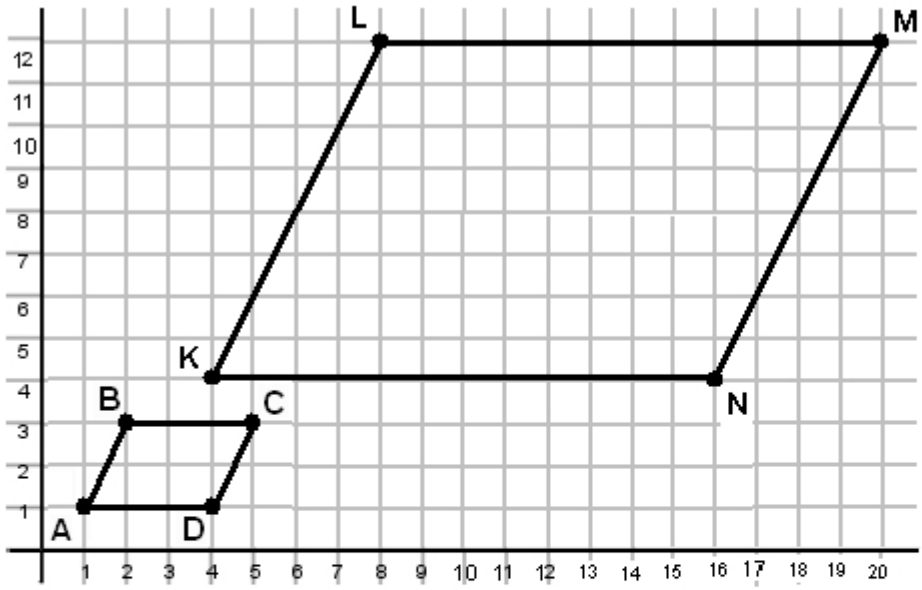
Problem:

If the rule (4x, 4y) is applied to the parallelogram ABCD in the figure, how many times larger is the perimeter of the image than the perimeter of the original?

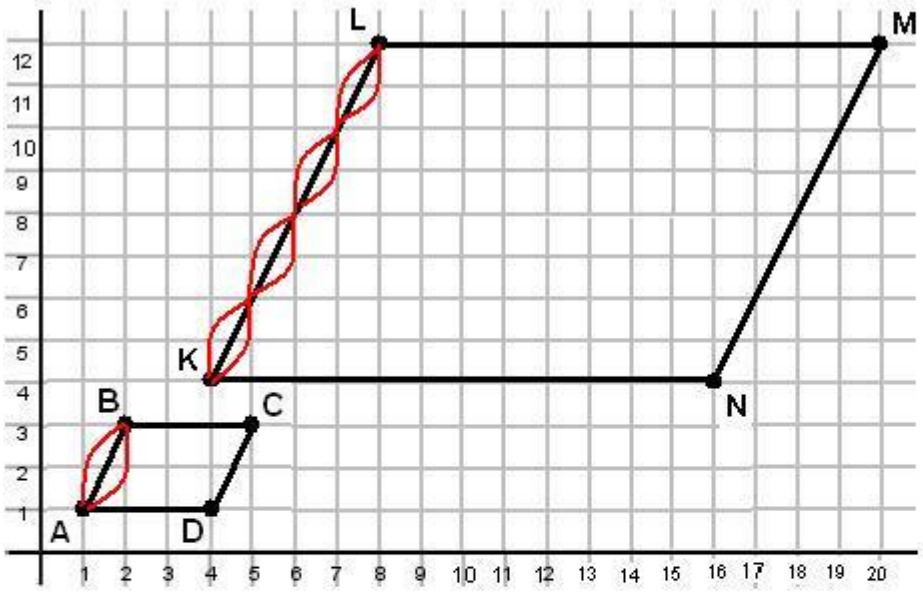


Solution:

We applied the 4x,4y rule to the parallelogram ABCD, and we got the new parallelogram KLMN. How many lenghts of AB is KL?



KL is 4 times AB. Think about the other corresponding sides: BC-LM, CD-MN, DA-NK. What is the scale factor?



The scale factor is 4 for all the sides. So the perimiter will be four time as long, too.

The answer is 4.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

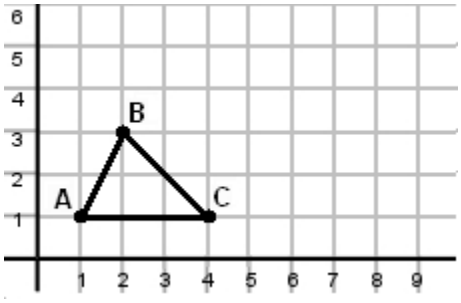
Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

If the rule (3x, 3y) is applied to the triangle ABC in the figure, how many times larger is the perimeter of

the image than the perimeter of the original?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 3. Please type in 3

Comment on this hint

Type your answer below (mathematical expression):

- 3

Submit Answer

Correct!
You are done with this problem!

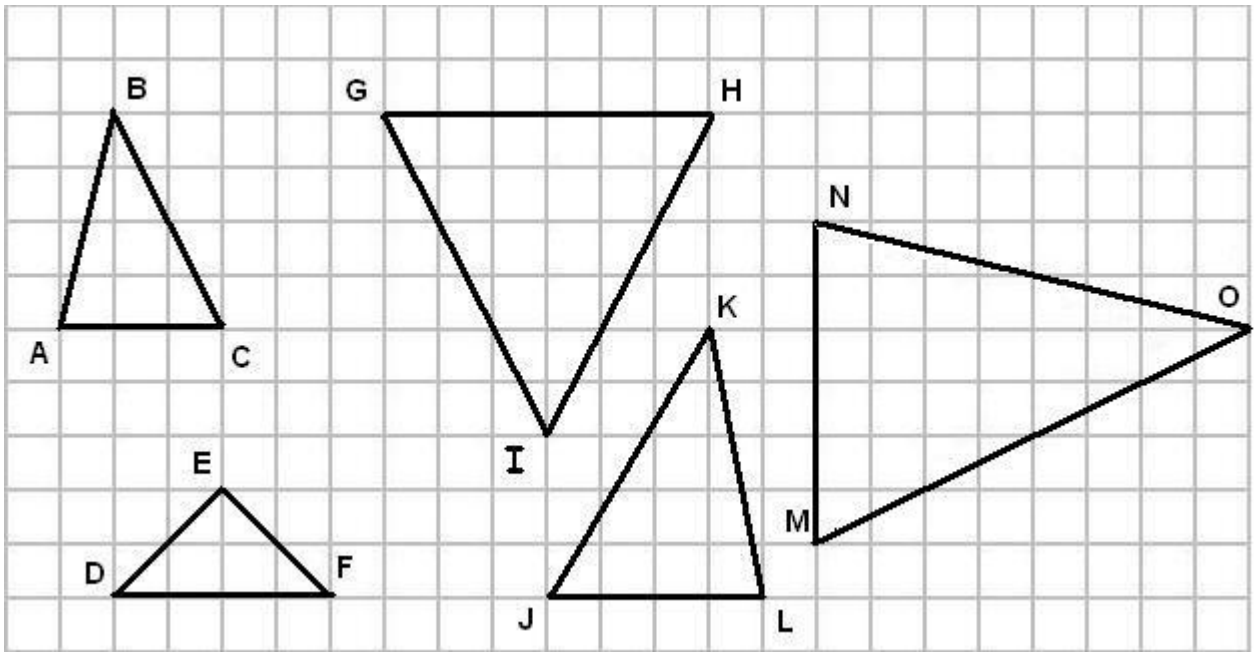
Comment on this problem

Assistment

Assistment #25470

You are previewing content.

Which triangle above is similar to ABC?



Comment on this question

Note DEF and GHI are both isoceles, but ABC is not. So they cannot be similar.

Comment on this hint

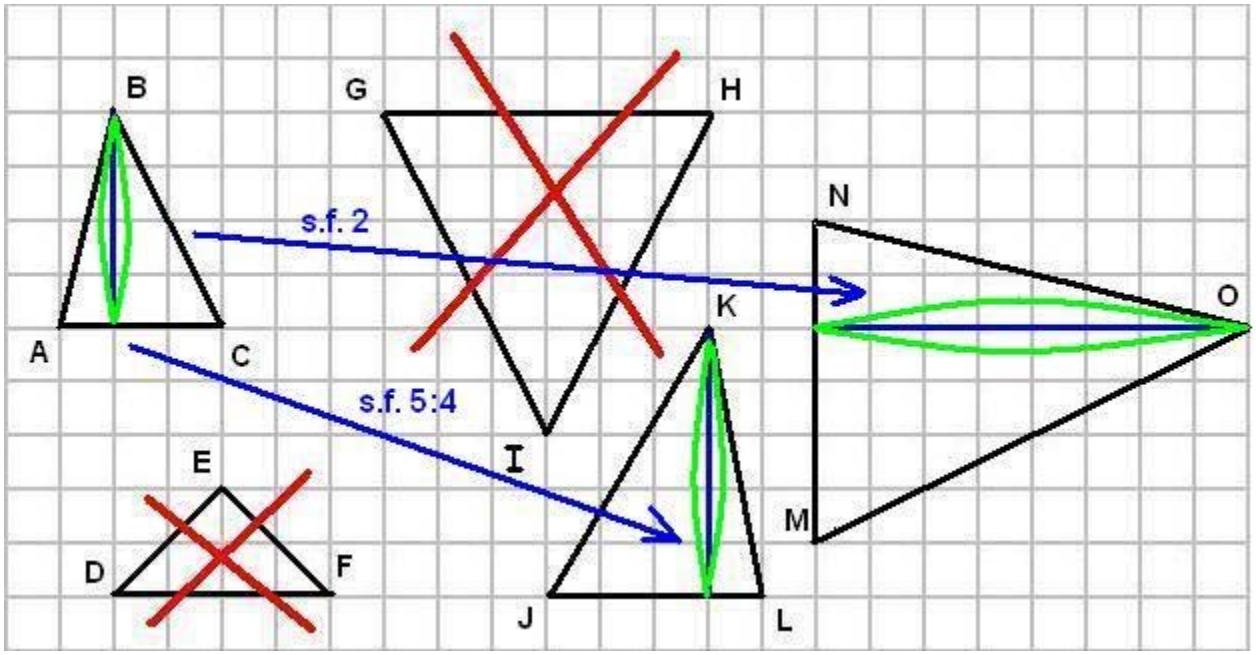
This leaves JKL and MNO. Use the grid to compare ABC to both JKL and MNO.

Find the smallest sides of each triangle and draw heights to those sides. Look if you can find two triangles with the same ratio.

Comment on this hint

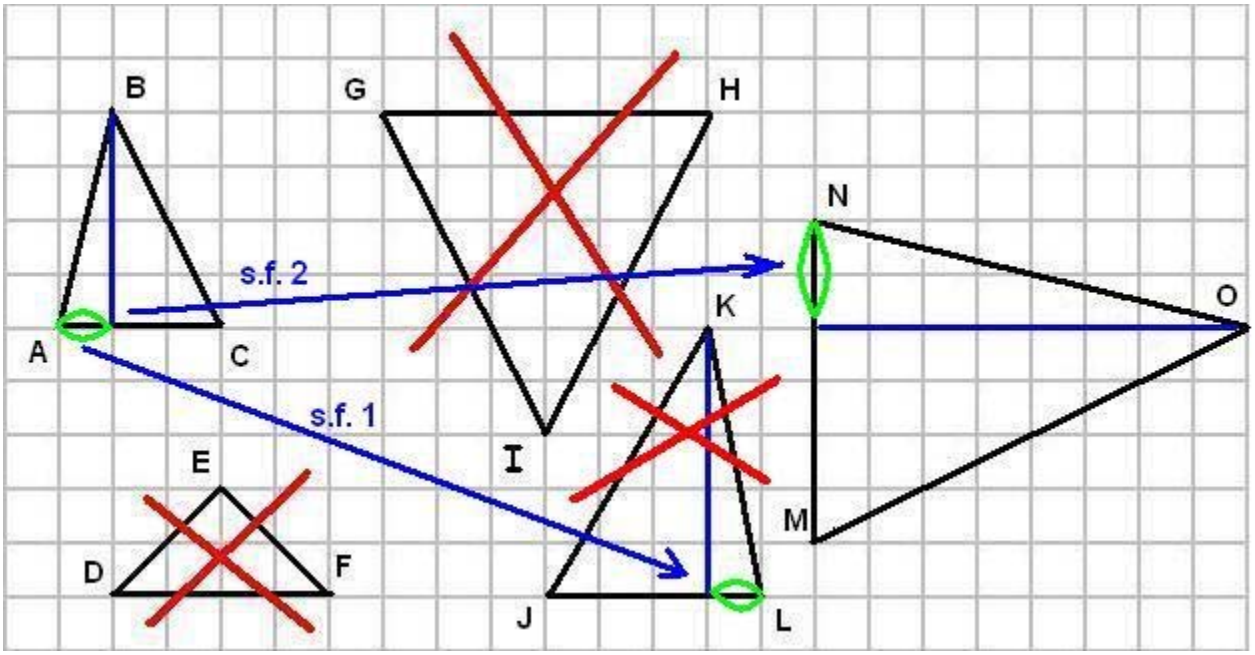
The scale factor of the height from ABC to MNO is 2, and the scale factor of the height from ABC to JKL is 5:4

For two triangles to be similar, all parts should have the same scale factor. Look if you can determine which of the two triangles is similar to ABC.



Comment on this hint

As shown on the image below, the scale factor for the smaller part of side JL of triangle JKL which is not 5:4. So, it cannot be the answer.



Comment on this hint

The triangle similar to ABC is MNO. Please choose answer D. MNO

Comment on this hint

Select one:

- A. DEF
- B. GHI
- C. JKL
- D. MNO

Submit Answer

Correct!
You are done with this problem!

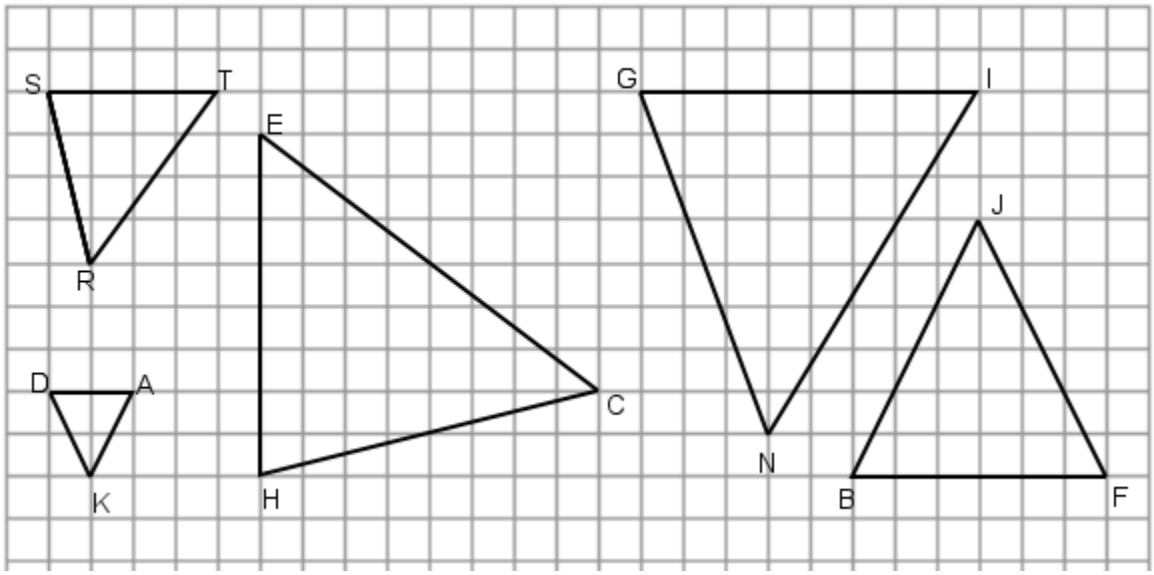
Comment on this problem

Assistment

Assistment #25503

You are previewing content.

Which triangle above is similar to STR?



Comment on this question

Request Help

Select one:

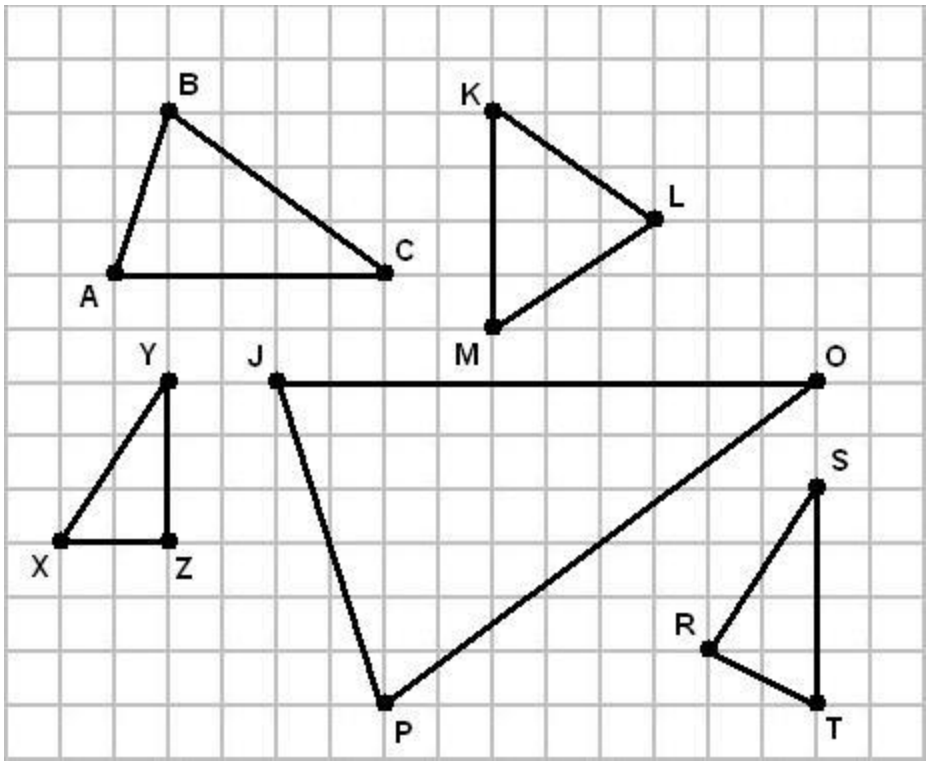
- A. DAK
- B. HEC
- C. GIN
- D. BFJ

Submit Answer

Let's move on and figure out this problem
Let's look at the solution for a problem **similar** to the one in the red box above:

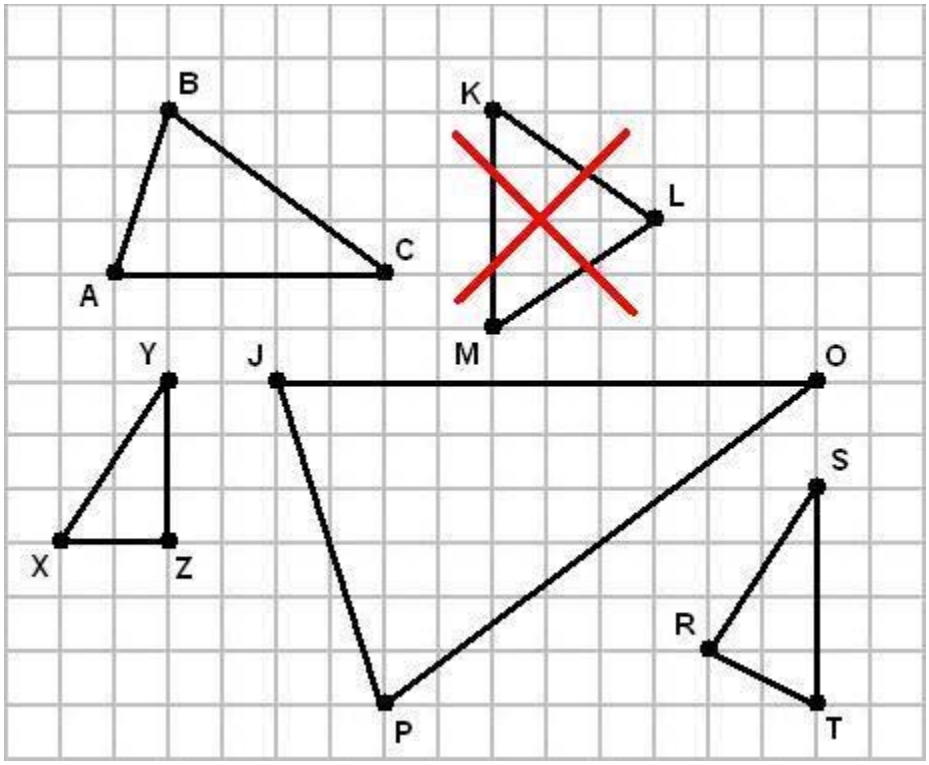
Problem:

Which triangle above is similar to ABC?

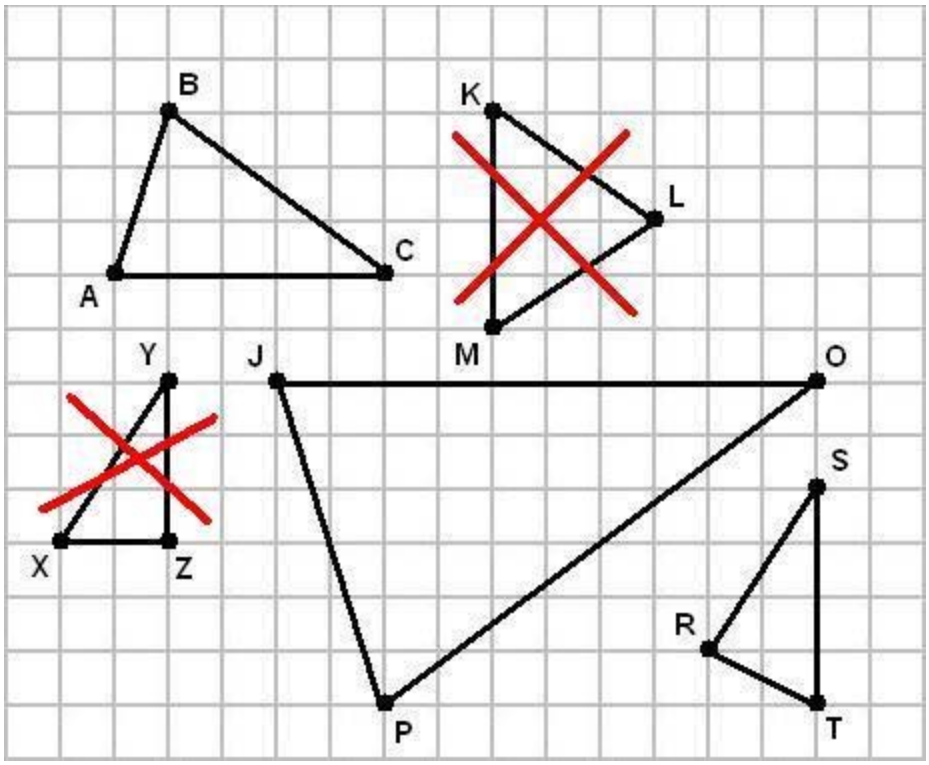


Solution:

Note KLM is isoceles, but ABC is not. So they cannot be similar.



Note also that XYZ is a right triangle, and ABS is not. So they cannot be similar.

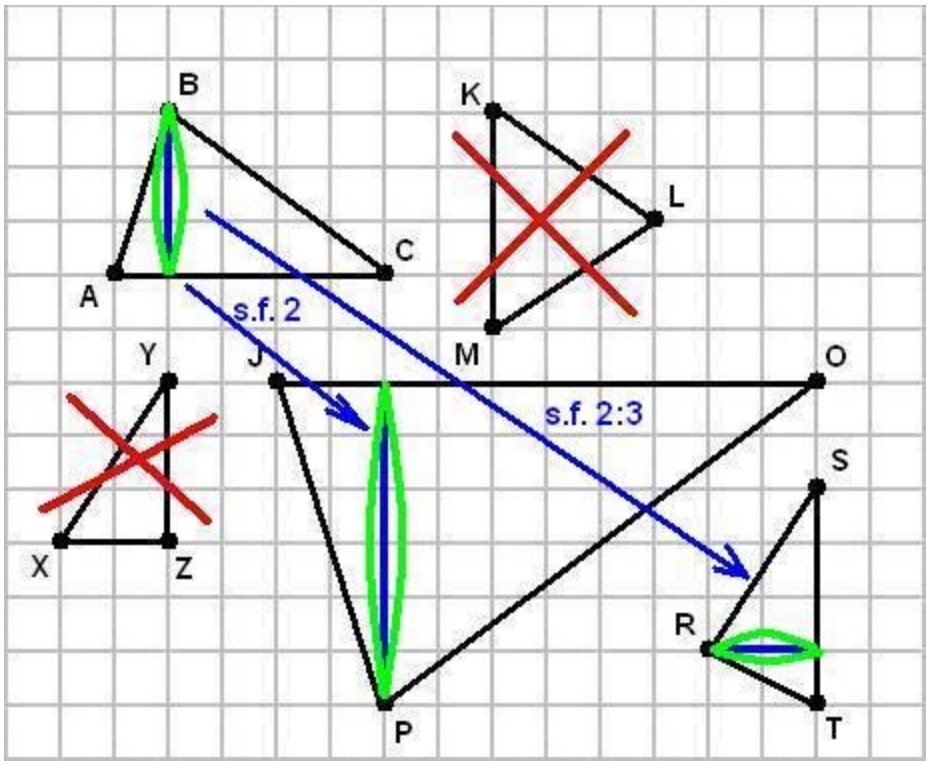


This leaves JOP and RST. Use the grid to compare ABC to both JOP and RST.

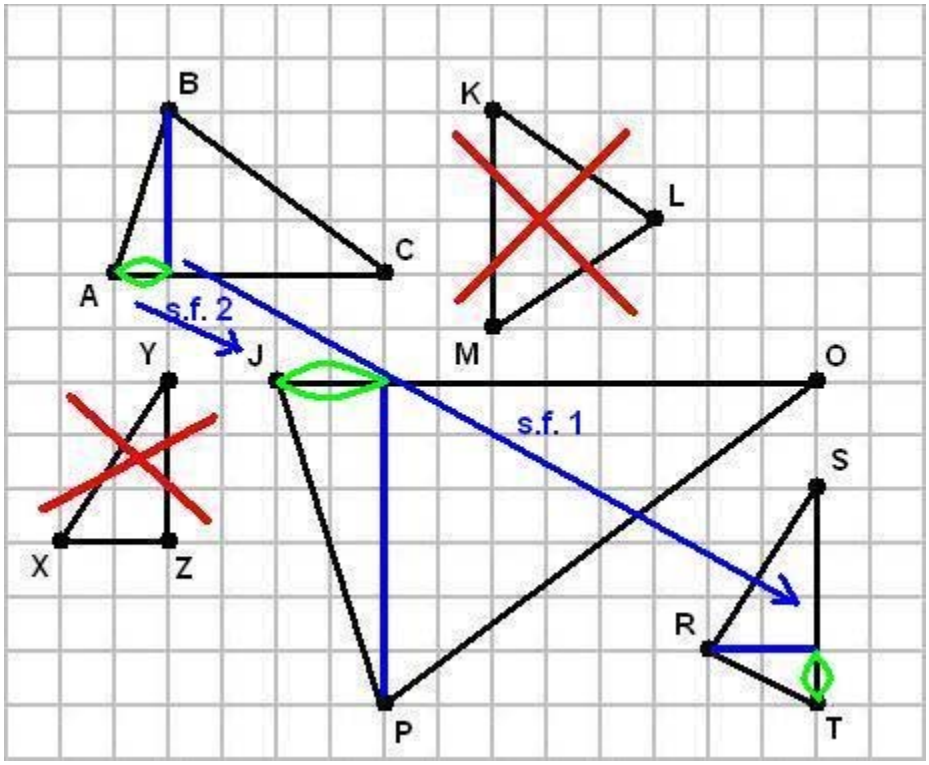
Find the largest sides of each triangle and draw heights to those sides. Look if you can find two triangles with the same ratio.

The scale factor of the heights from ABC to RST is 2:3, and the scale factor of the heights from ABC to JOP is 2.

For two triangles to be similar, all parts should have the same scale factor. Look if you can determine which of the two triangles is similar to ABC.



As shown on the image below, the scale factor for the smaller part of side TS of triangle RST which is not 2:3. So, it cannot be the answer.



The triangle similar to ABC is JOP

Comment on this question

Select one:

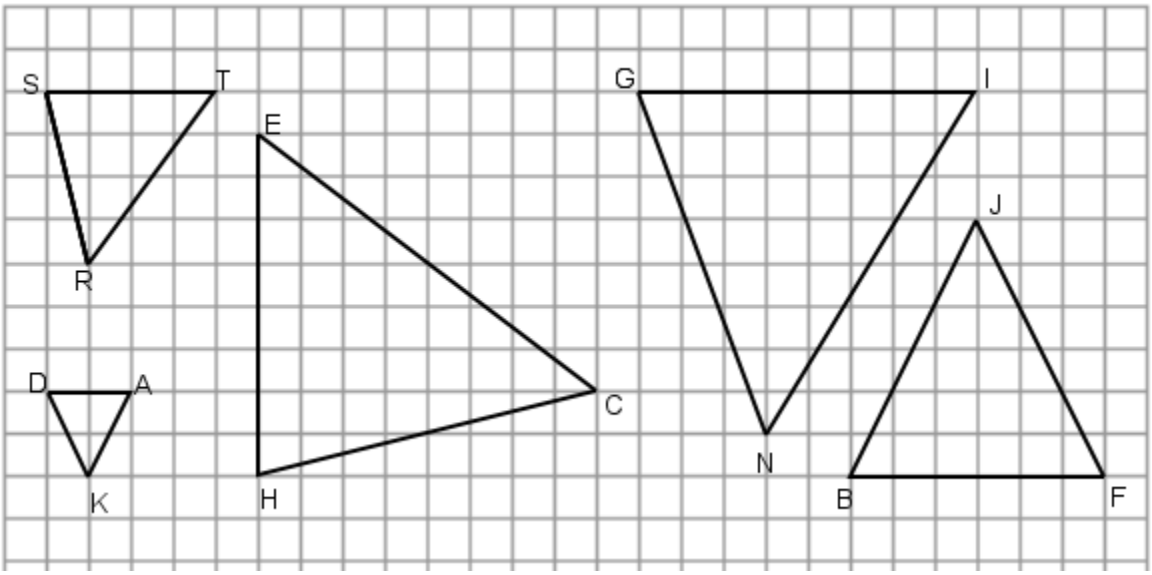
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which triangle above is similar to STR?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is HEC. Please, choose B. HEC

Comment on this hint

Select one:

- A. DAK
- B. HEC
- C. GIN
- D. BFJ

Submit Answer

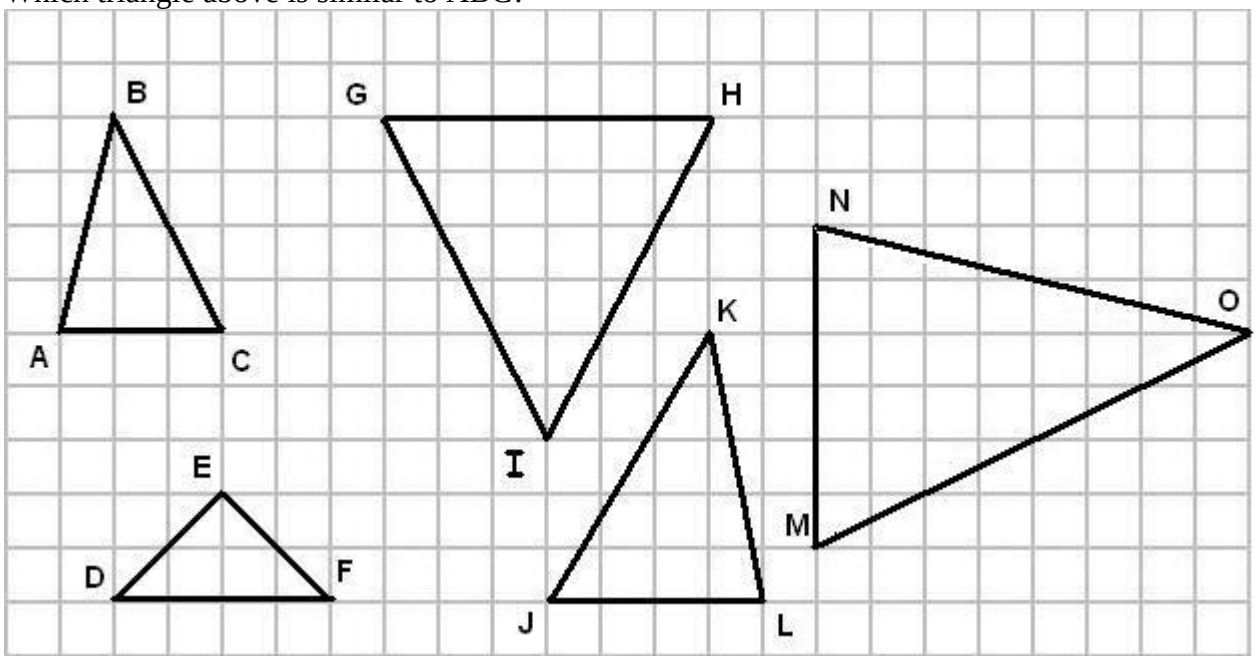
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25505

You are previewing content.

Which triangle above is similar to ABC?



Comment on this question

Request Help

Select one:

- A. DEF
- B. GHI
- C. JKL
- D. MNO

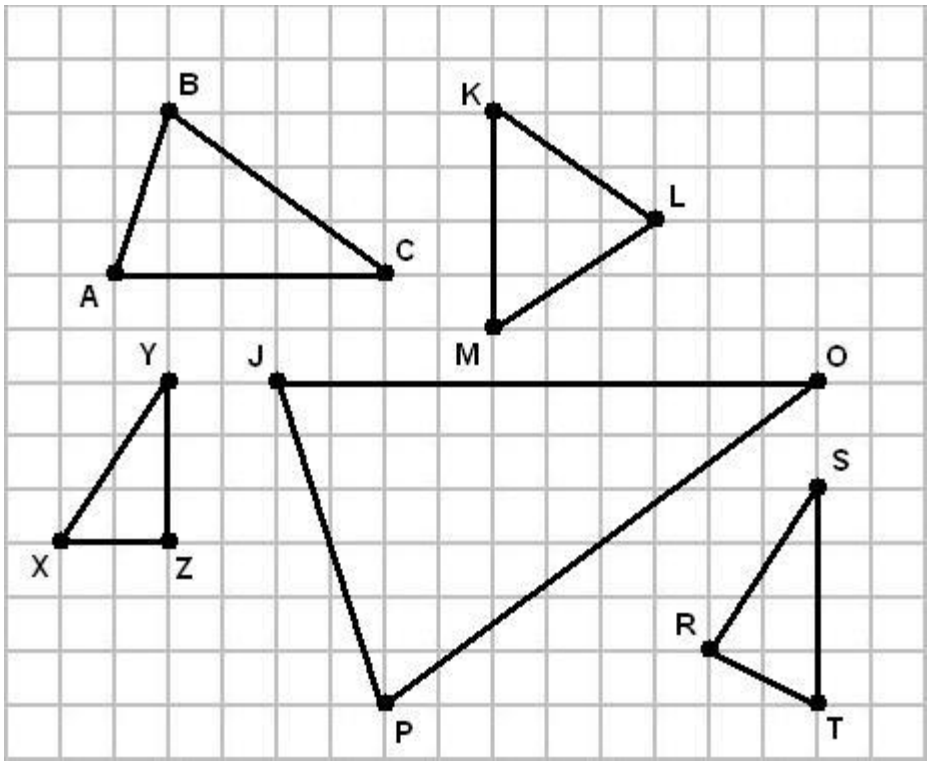
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem **similar** to the one in the red box above:

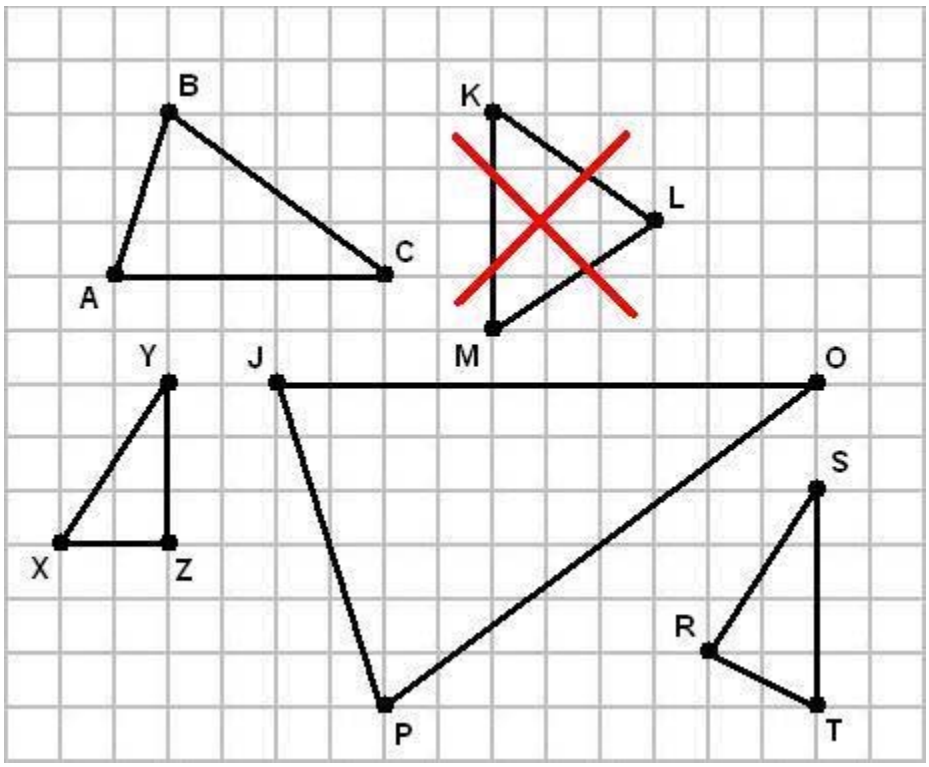
Problem:

Which triangle above is similar to ABC?

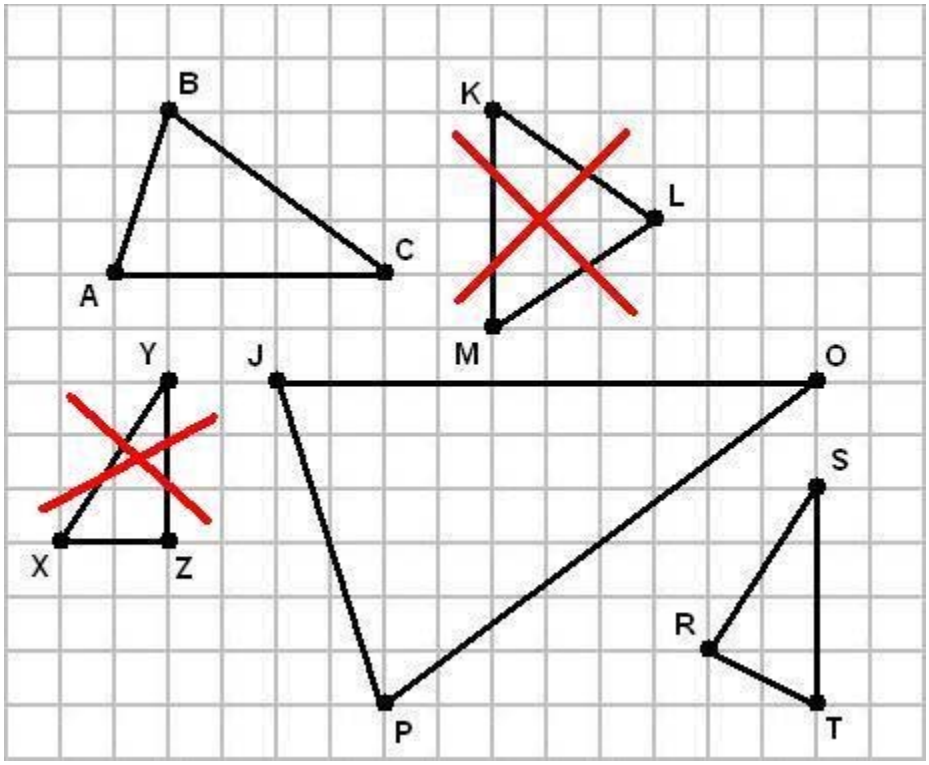


Solution:

Note KLM is isoceles, but ABC is not. So they cannot be similar.



Note also that XYZ is a right triangle, and ABS is not. So they cannot be similar.

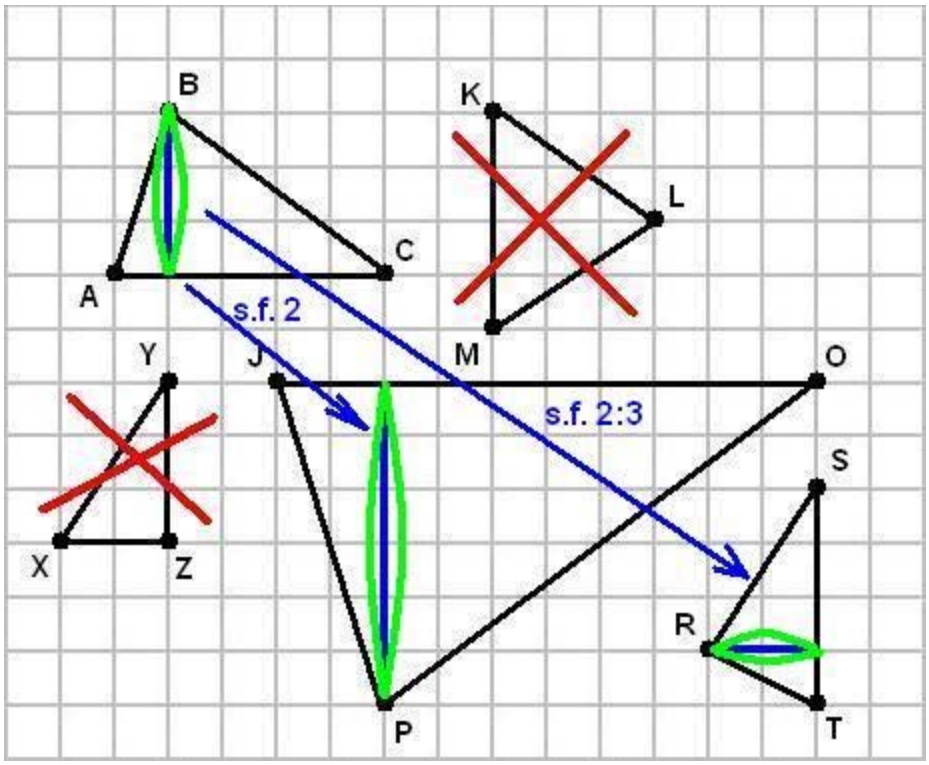


This leaves JOP and RST. Use the grid to compare ABC to both JOP and RST.

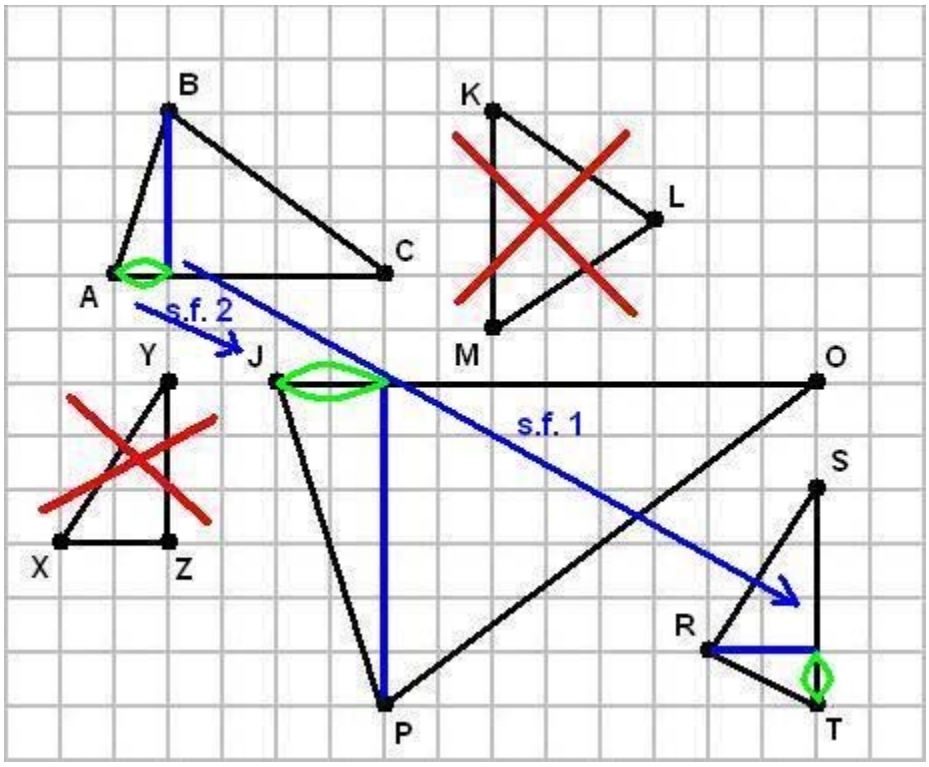
Find the largest sides of each triangle and draw heights to those sides. Look if you can find two triangles with the same ratio.

The scale factor of the heights from ABC to RST is 2:3, and the scale factor of the heights from ABC to JOP is 2.

For two triangles to be similar, all parts should have the same scale factor. Look if you can determine which of the two triangles is similar to ABC.



As shown on the image below, the scale factor for the smaller part of side TS of triangle RST which is not 2:3. So, it cannot be the answer.



The triangle similar to ABC is JOP

Comment on this question

Select one:

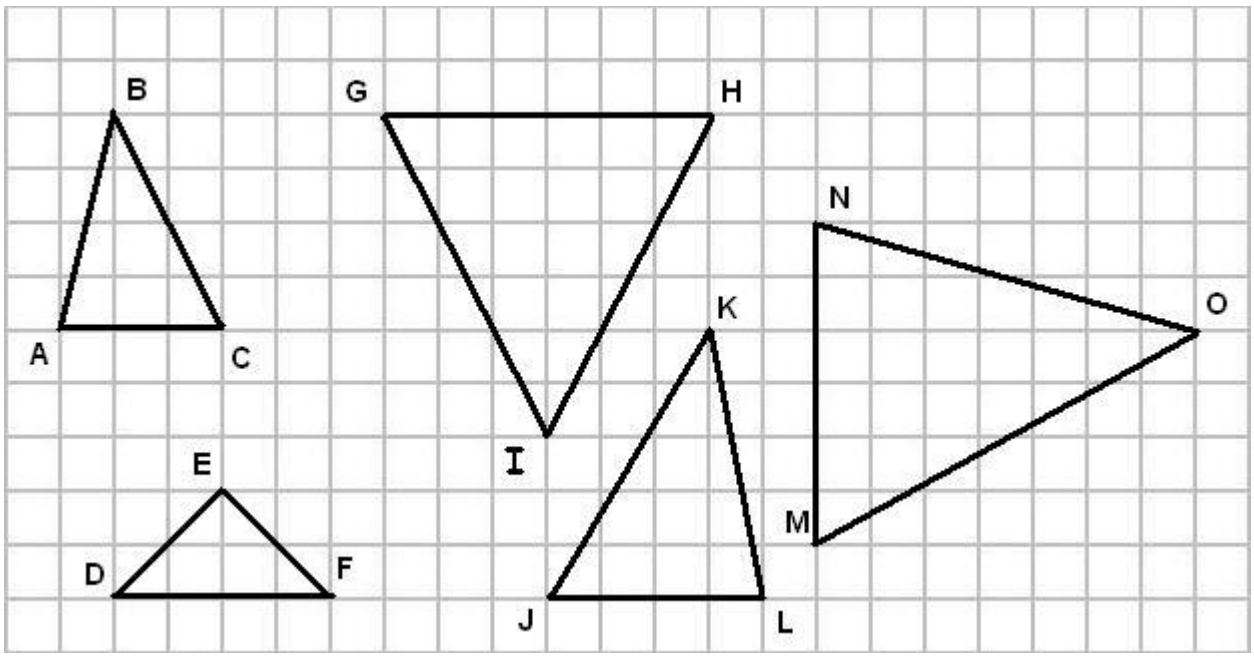
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which triangle above is similar to ABC?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is MNO. Please, choose D. MNO

Comment on this hint

Select one:

- A. DEF
- B. GHI
- C. JKL
- D. MNO

Submit Answer

Correct!

You are done with this problem!

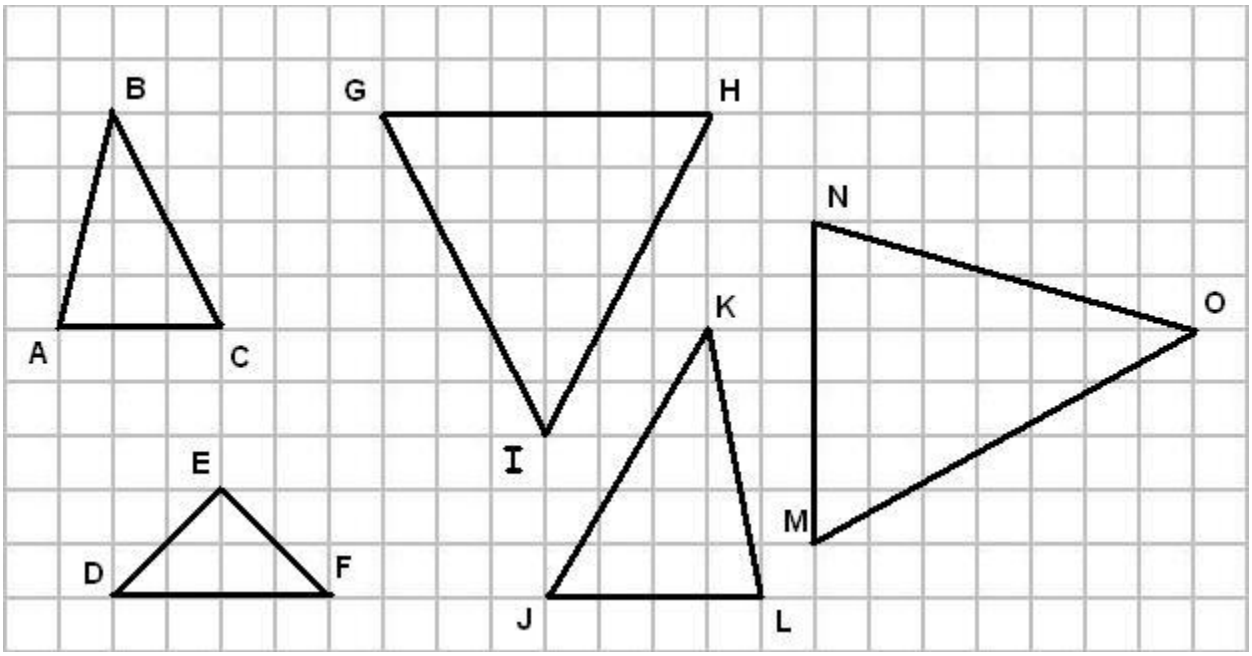
Comment on this problem

Assistment

Assistment #25521

You are previewing content.

Now that we know ABC and MNO are similar. What side corresponds to BC in triangle MNO?



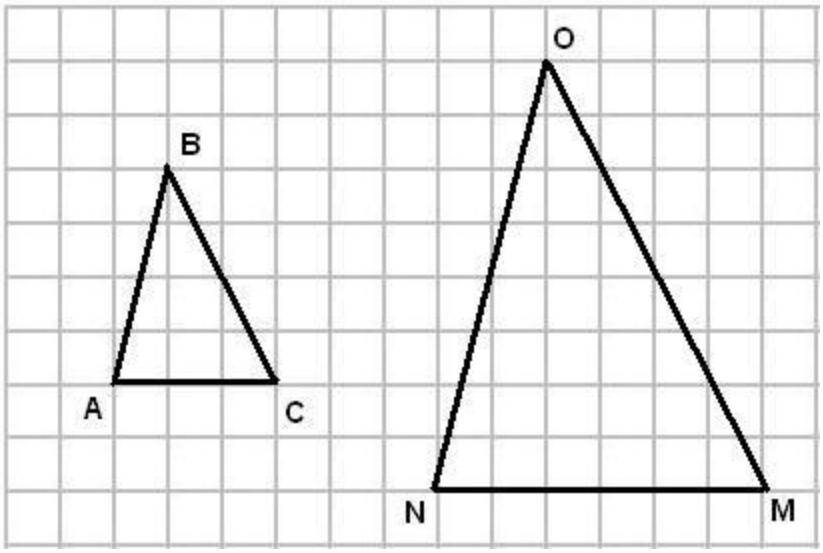
Comment on this question

In may help to draw MNO reoriented to match ABC on a piece of paper. Rotate MNO so it is lined up on the grid so that it is just like the triangle ABC, but stretched.

Be careful not to mix up the letters!

Comment on this hint

Below is a drawing with MNO rotated. Can you see which sides are corresponding now?



Comment on this hint

Since the longest side BC matches with the longest side OM, they are corresponding. Select C. OM

Comment on this hint

Select one:

- A. MN
- B. NO
- C. OM
- D. Cannot be determined.

Submit Answer

Correct!
You are done with this problem!

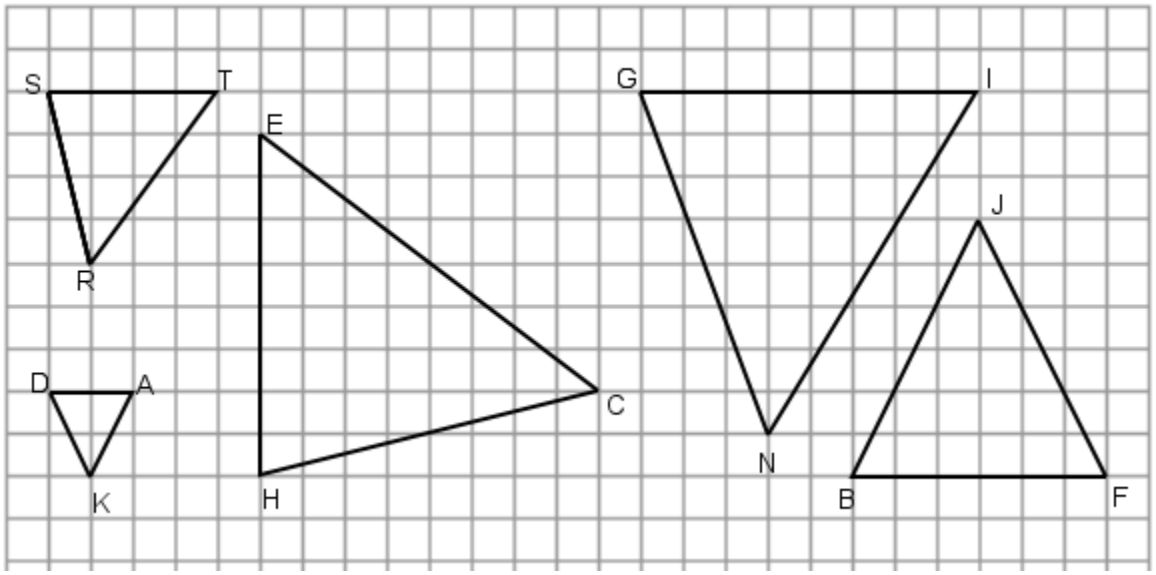
Comment on this problem

Assistment

Assistment #25524

You are previewing content.

Now that we know STR and HEC are similar. What side corresponds to SR in triangle HEC?



Comment on this question

Request Help

Select one:

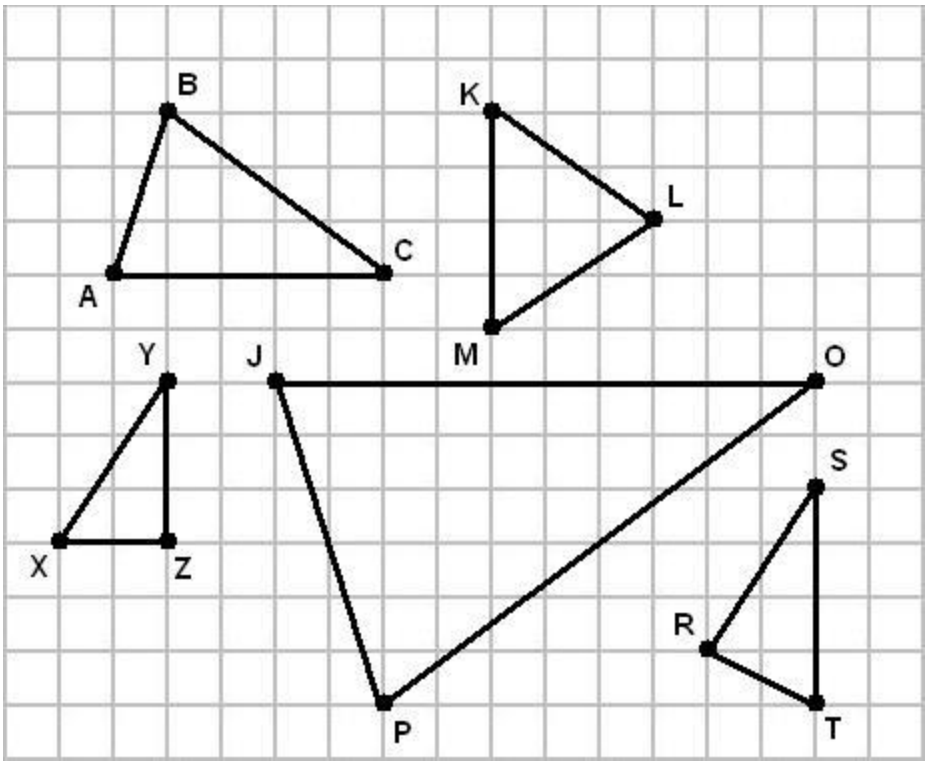
- A. EH
- B. CE
- C. HC
- D. Cannot be determined

Submit Answer

Let's move on and figure out this problem
Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

We know ABC and JOP are similar. What side corresponds to AC in triangle JOP?

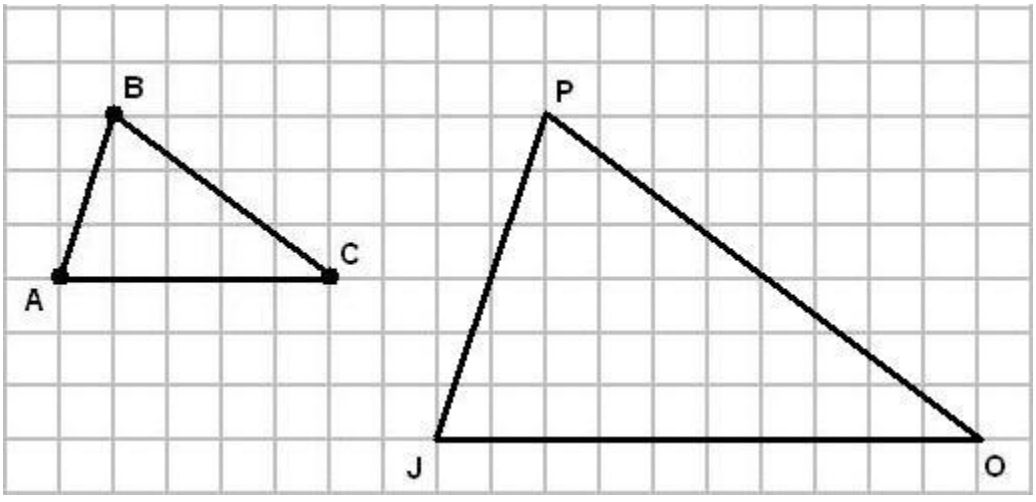


Solution:

In may help to draw JOP reoriented to match ABC on a piece of paper. Rotate JOP so it is lined up on the grid so that it is just like the triangle ABC, but stretched.

Be careful not to mix up the letters!

Below is a drawing with JOP rotated. Can you see which sides are corresponding now?



Since the longest side AC matches with the longest side JO, they are corresponding. The answer is JO.

Comment on this question

Select one:

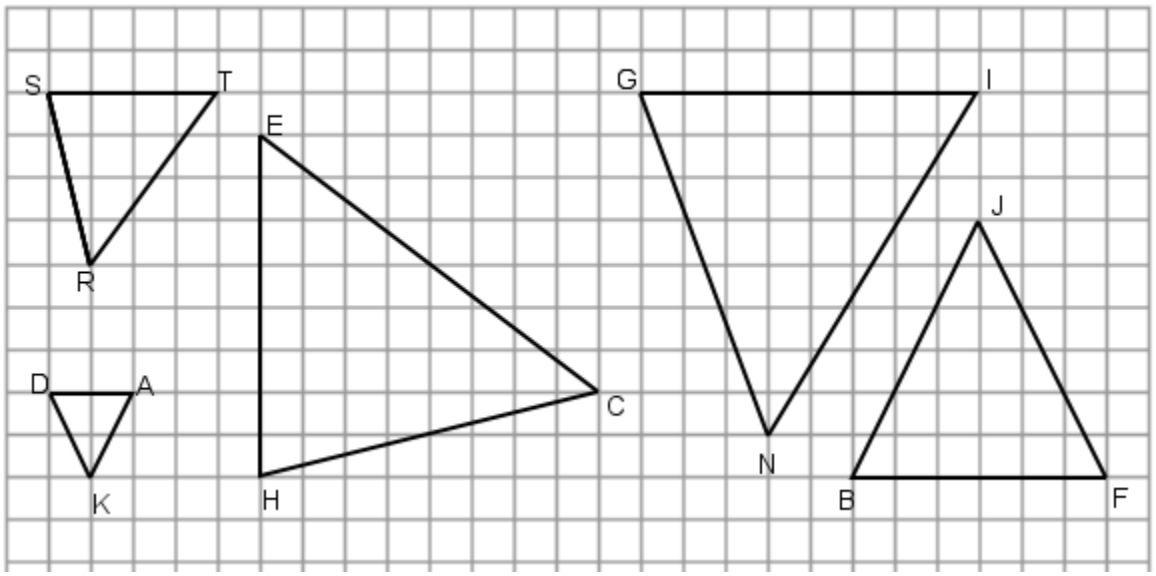
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Now that we know STR and HEC are similar. What side corresponds to SR in triangle HEC?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is HC. Please choose C. HC

Comment on this hint

Select one:

- A. EH
- B. CE
- C. HC
- D. Cannot be determined

Submit Answer

Correct!

You are done with this problem!

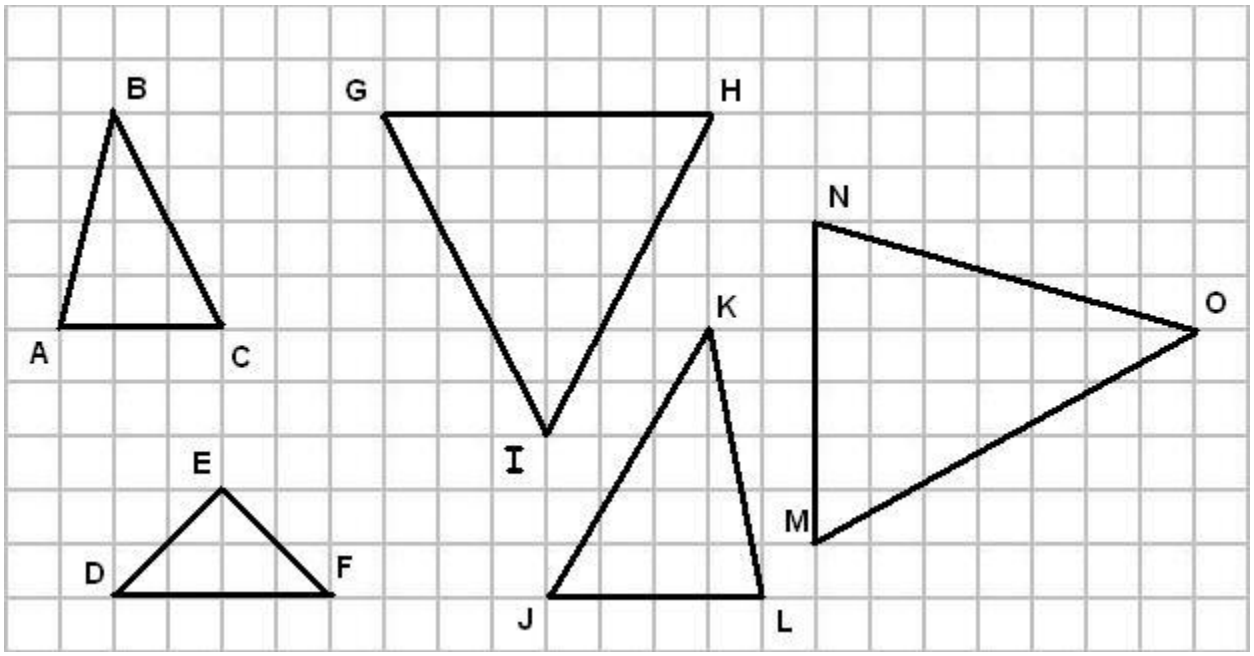
Comment on this problem

Assistment

Assistment #25539

You are previewing content.

Now that we know ABC and MNO are similar. What side corresponds to BC in triangle MNO?



Comment on this question

Request Help

Select one:

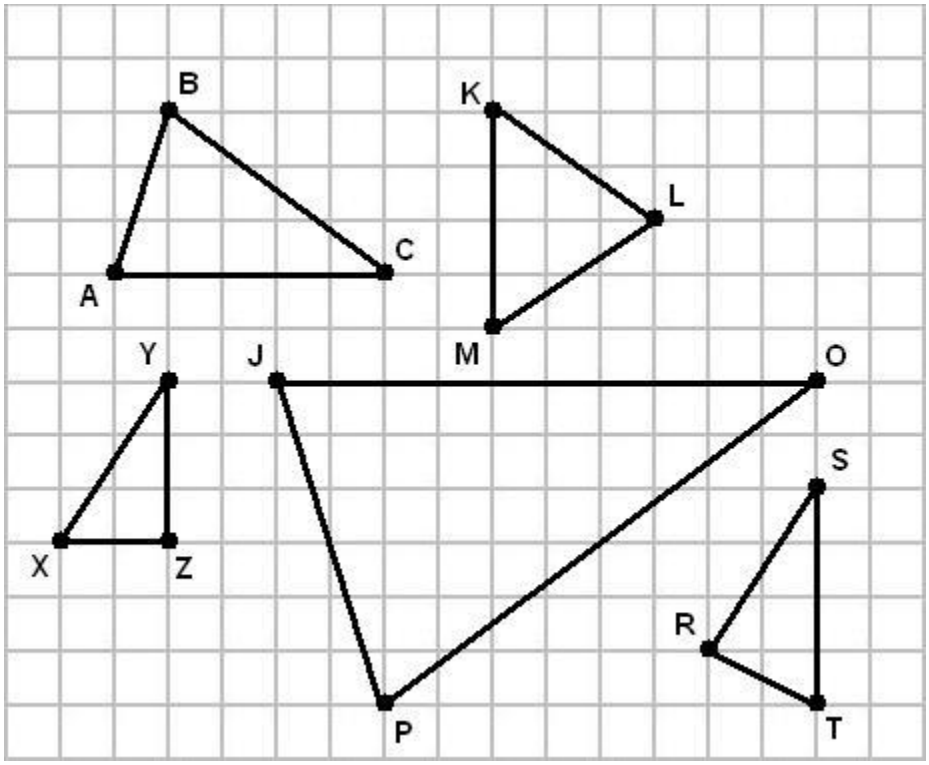
- A. MN
- B. NO
- C. OM
- D. Cannot be determined.

Submit Answer

Let's move on and figure out this problem
Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

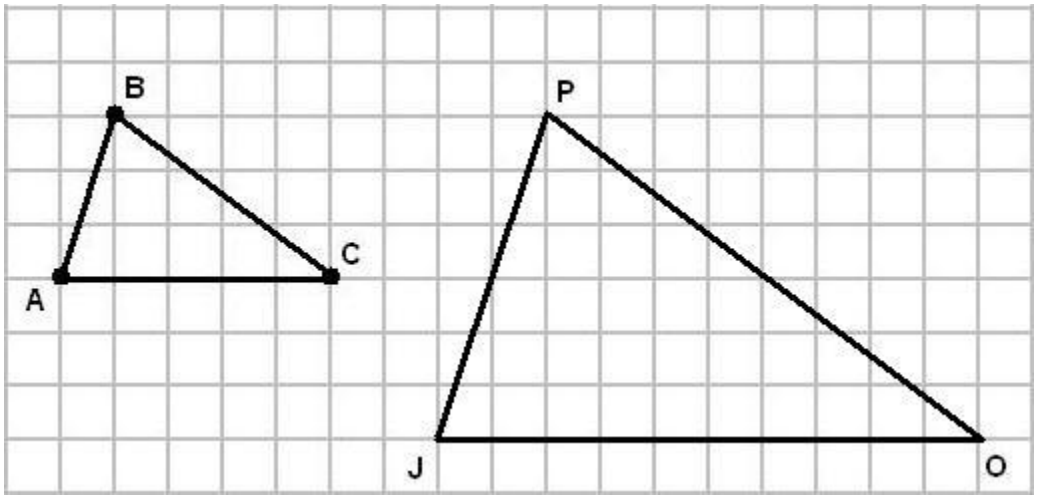
We know ABC and JOP are similar. What side corresponds to AC in triangle JOP?



Solution:
In may help to draw JOP reoriented to match ABC on a piece of paper. Rotate JOP so it is lined up on the grid so that it is just like the triangle ABC, but stretched.

Be careful not to mix up the letters!

Below is a drawing with JOP rotated. Can you see which sides are corresponding now?



Since the longest side AC matches with the longest side JO, they are corresponding. The answer is JO.

Comment on this question

Select one:

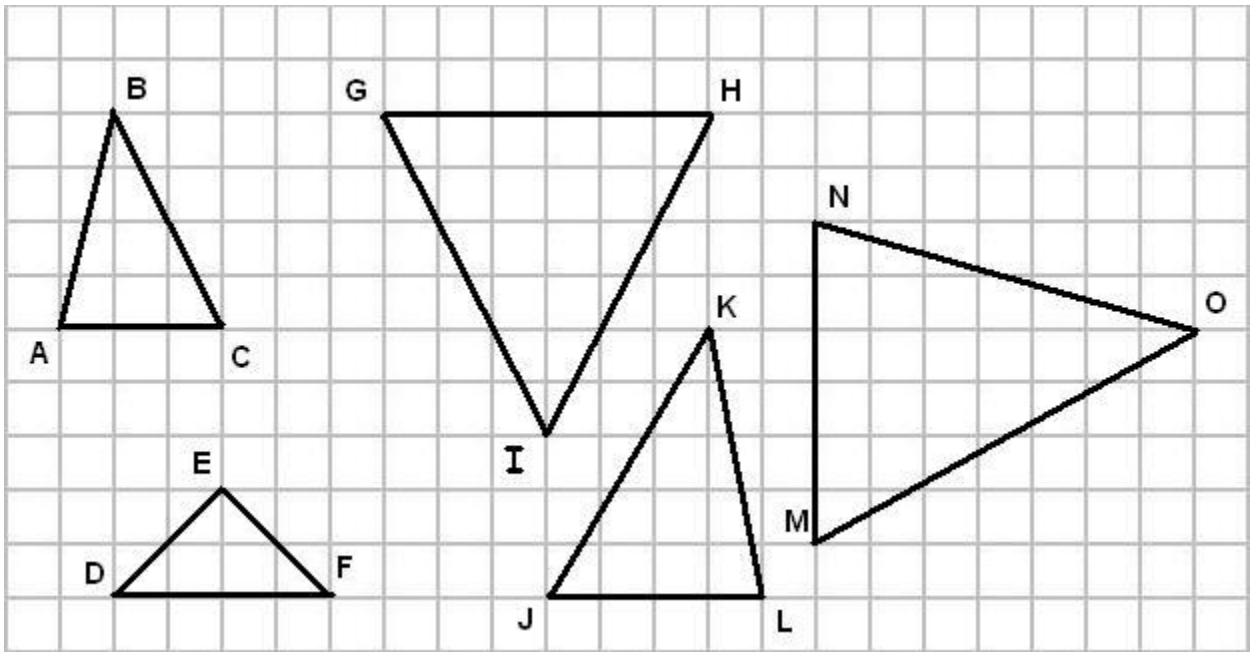
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Now that we know ABC and MNO are similar. What side corresponds to BC in triangle MNO?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is OM. Please choose C. OM

Comment on this hint

Select one:

- A. MN

- B. NO
- C. OM
- D. Cannot be determined.

Submit Answer

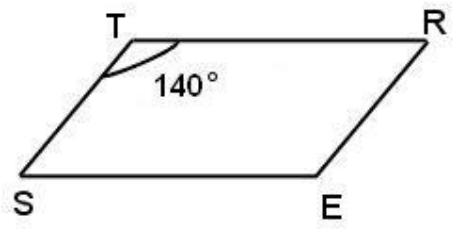
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25637

You are previewing content.

What is the measure of angle R?

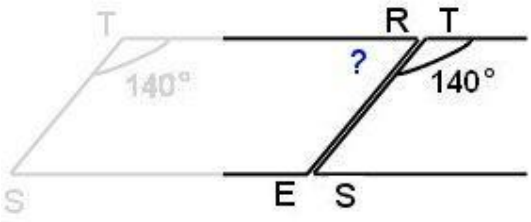


Comment on this question

Adjacent angles in a parallelogram are supplementary (add up to 180 degrees)

Comment on this hint

By cutting the parallelogram in half and rearranging it, we see that the angle R and the angle T make an angle of 180?



Comment on this hint

So, 140 + ? = 180

What should ? be?

Comment on this hint

? = 40, so type in 40

Comment on this hint

Type your answer below (mathematical expression):

- 40

Submit Answer

Correct!

You are done with this problem!

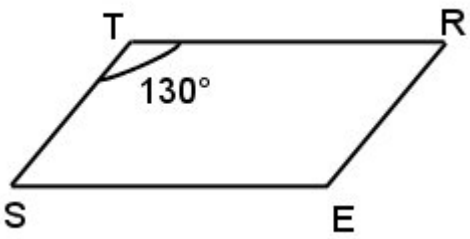
Comment on this problem

Assistment

Assistment #25638

You are previewing content.

What is the measure of angle R?



Comment on this question

Request Help

Type your answer below (mathematical expression):

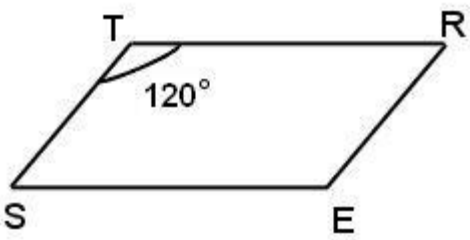
-

Submit Answer

Let's move on and figure out this problem
Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

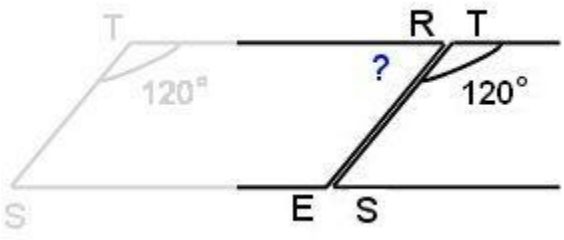
What is the measure of angle R?



Solution:

Adjacent angles in a parallelogram are supplementary (add up to 180 degrees)

By cutting the parallelogram in half and rearranging it, we see that the angle R and the angle T make an angle of 180?



So, 120 + ? = 180

What should ? be?

? = 60, so the answer for this problem is 60.

Comment on this question

Select one:

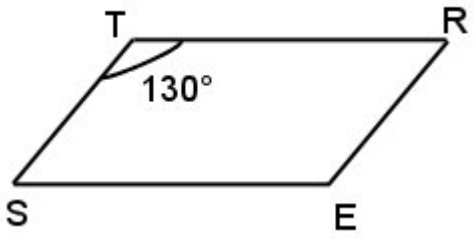
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the measure of angle R?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 50. Please, type in 50

Comment on this hint

Type your answer below (mathematical expression):

- 50

Submit Answer

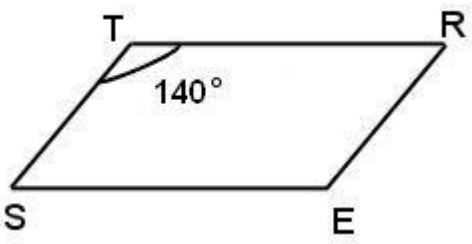
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25639

You are previewing content.

What is the measure of angle R?



Comment on this question

Request Help

Type your answer below (mathematical expression):

-

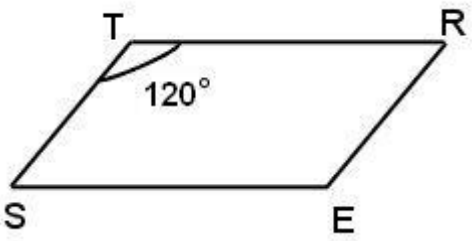
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

What is the measure of angle R?

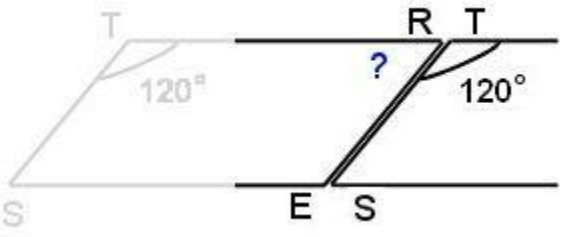


Solution:

Adjacent angles in a parallelogram are supplementary (add up to 180 degrees)

By cutting the parallelogram in half and rearranging it, we see that the angle R and the angle T make an

angle of 180?



So, 120 + ? = 180

What should ? be?

? = 60, so the answer for this problem is 60.

Comment on this question

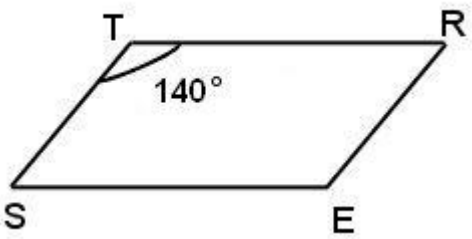
Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!
Now try the original problem again. You may look back at the worked example if that helps you.

What is the measure of angle R?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 40. Please, type in 40

Comment on this hint

Type your answer below (mathematical expression):

- 40

Submit Answer

Correct!

You are done with this problem!

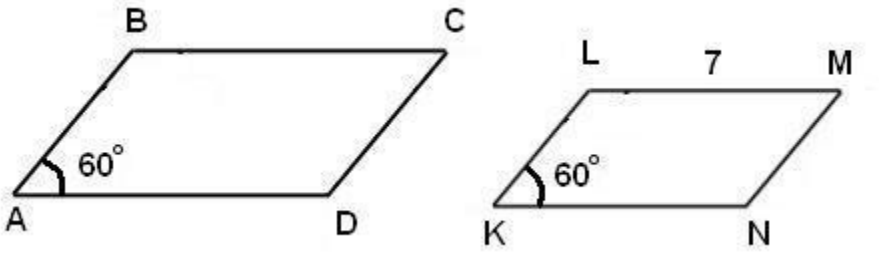
Comment on this problem

Assistment

Assistment #25643

You are previewing content.

If we know the area of ABCD is 16 times that of KLMN, what is the measure of BC? (Picture is not drawn to scale)

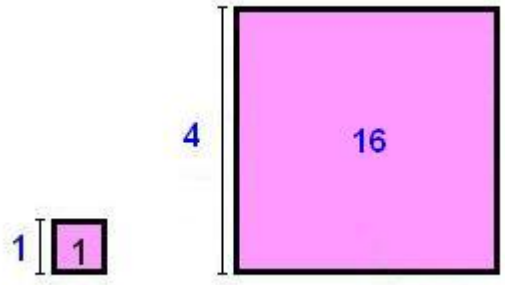


Comment on this question

The two parallelograms are similar since they are both parallelograms and have a common angle of 60 degrees.

Comment on this hint

When the area of a figure is 16 times as large the scale factor is 4. Refer to the picture above involving squares.



Comment on this hint

If the scale factor from the smaller parallelogram to the larger is 4, what is the measure of BC?

Comment on this hint

Since the scale factor is 4 from the small parallelogram to the large parallelogram we can multiply the side of the small parallelogram by 4 to get the measure of the side of the large parallelogram.
4 * 7 = 28. Please, type in 28

Comment on this hint

Type your answer below (mathematical expression):

- 28

Submit Answer

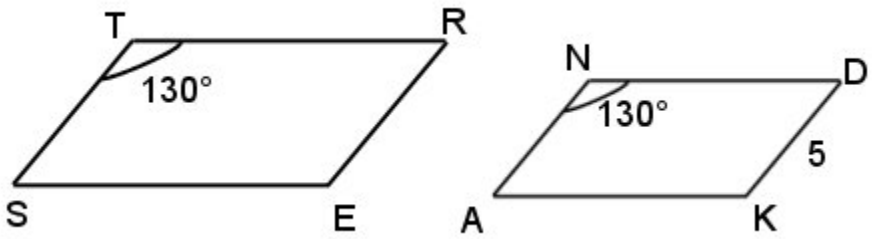
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25644

You are previewing content.

If we know the area of STRE is 9 times that of ANDK, what is the measure of ER? (Picture is not drawn to scale)



Comment on this question

Request Help

Type your answer below (mathematical expression):

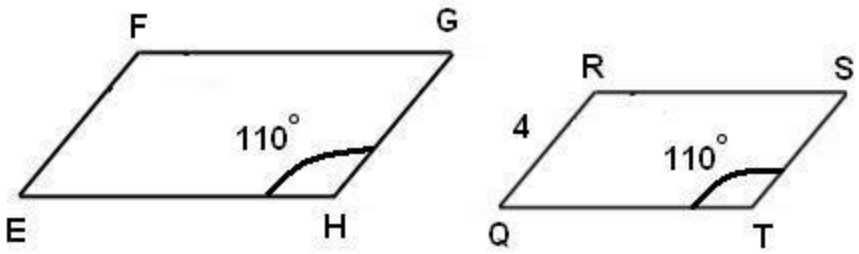
-

Submit Answer

Let's move on and figure out this problem
Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

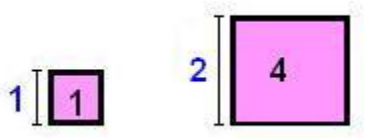
If we know the area of EFGH is 4 times that of QRST, what is the measure of EF? (Picture is not drawn to scale)



Solution:

The two parallelograms are similar since they are both parallelograms and have a common angle of 110 degrees.

When the area of a figure is 4 times as large the scale factor is 2. Refer to the picture above involving squares.



If the scale factor from the smaller parallelogram to the larger is 2, what is the measure of EF?

Since the scale factor is 2 from the small parallelogram to the large parallelogram we can multiply the side of the small parallelogram by 2 to get the measure of the side of the large parallelogram.
4 * 2 = 8. The answer for this problem is 8

Comment on this question

Select one:

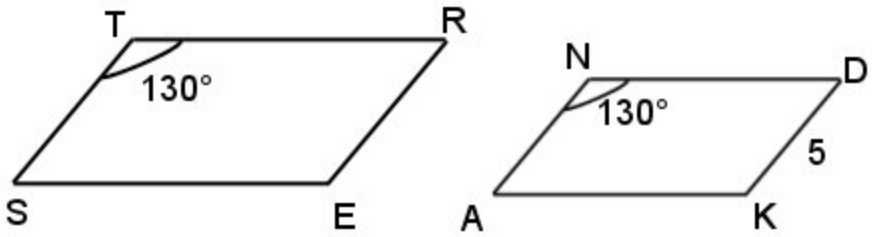
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

If we know the area of STRE is 9 times that of ANDK, what is the measure of ER? (Picture is not drawn to scale)



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 15. Please, type in 15

Comment on this hint

Type your answer below (mathematical expression):

- 15

Submit Answer

Correct!
You are done with this problem!

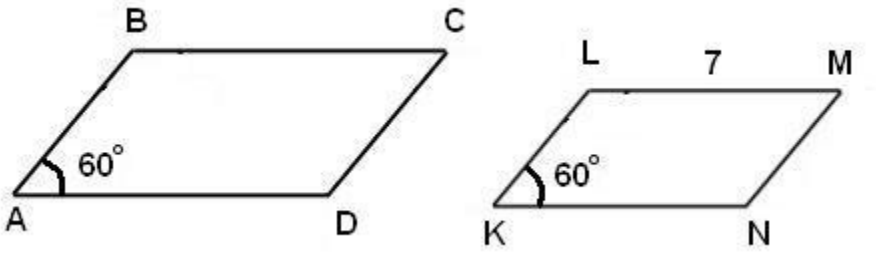
Comment on this problem

Assistment

Assistment #25646

You are previewing content.

If we know the area of ABCD is 16 times that of KLMN, what is the measure of BC? (Picture is not drawn to scale)



Comment on this question

Request Help

Type your answer below (mathematical expression):

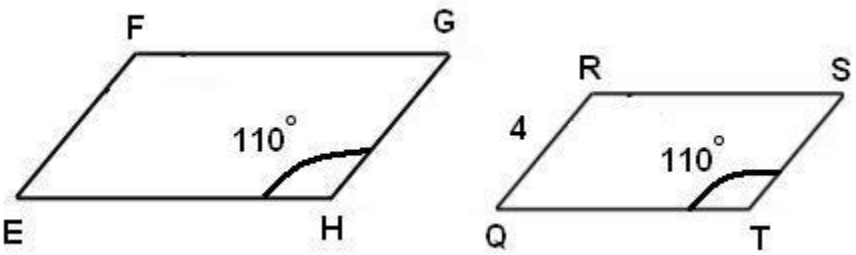
-

Submit Answer

Let's move on and figure out this problem
Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

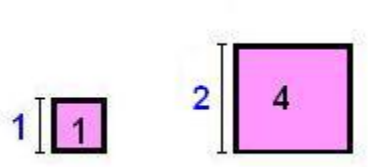
If we know the area of EFGH is 4 times that of QRST, what is the measure of EF? (Picture is not drawn to scale)



Solution:

The two parallelograms are similar since they are both parallelograms and have a common angle of 110 degrees.

When the area of a figure is 4 times as large the scale factor is 2. Refer to the picture above involving squares.



If the scale factor from the smaller parallelogram to the larger is 2, what is the measure of EF?

Since the scale factor is 2 from the small parallelogram to the large parallelogram we can multiply the side of the small parallelogram by 2 to get the measure of the side of the large parallelogram.
4 * 2 = 8. The answer for this problem is 8

Comment on this question

Select one:

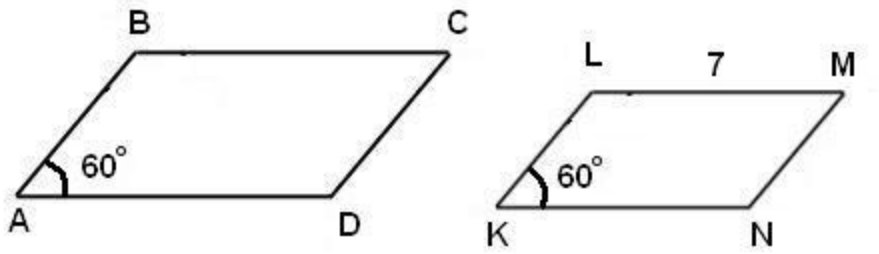
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

If we know the area of ABCD is 16 times that of KLMN, what is the measure of BC? (Picture is not drawn to scale)



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 28. Please, type in 28

Comment on this hint

Type your answer below (mathematical expression):

- 28

Submit Answer

Correct!
You are done with this problem!

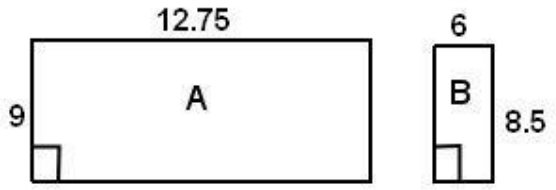
Comment on this problem

Assistment

Assistment #25683

You are previewing content.

Parallelogram A and B are similar. What is the scale factor from rectangle **B to A**?



Comment on this question

Notice that the side of value 6 corresponds to the side of value 9. Also, the side of value 8.5 corresponds to the side of value 12.75.

Comment on this hint

Another way to see scale factor here is asking how much would you multiply a side of B by to get the corresponding side of A?

(Since we are looking at how B scales up to A, we notice that A is bigger than B. This means that the scale factor will be greater than 1)

Comment on this hint

For these rectangles we ask what do we multiply by 6 to get 9 and does that same number multiply by 8.5 to get 12.75? We are looking for 6 * x = 9.

Comment on this hint

Because of fact families, we know 6 * x = 9, we know that x = 9 / 6 = 1. 5

We can check this

6 * 1.5 = 9 and 8.5 * 1.5 = 12.75

So the scale factor is 1.5. Please type in 1.5

Comment on this hint

Type your answer below (mathematical expression):

-

Submit Answer

Correct!
You are done with this problem!

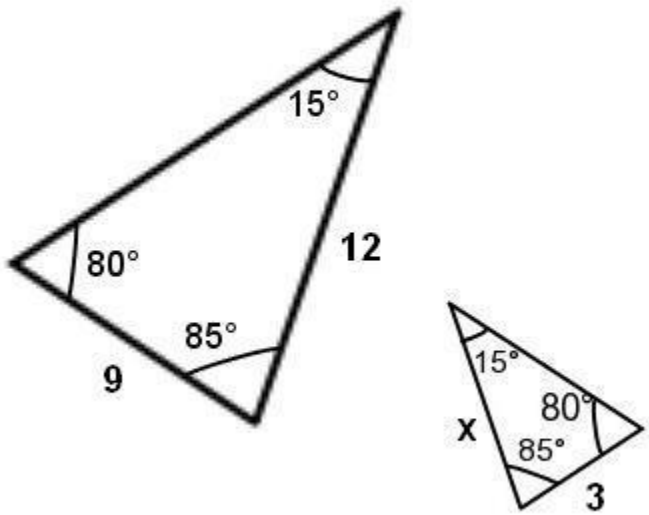
Comment on this problem

Assistment

Assistment #25684

You are previewing content.

The two triangles are similar. Find the length of the missing side, x.



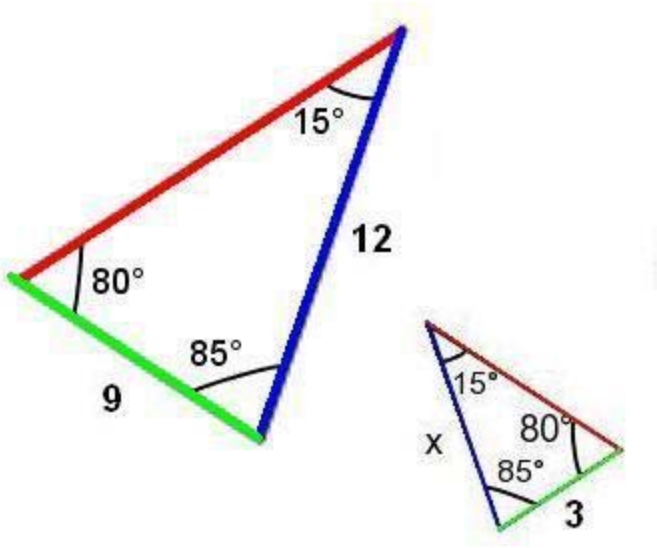
Comment on this question

We need to find the scale factor from the large triangle to the small one. Since the triangle gets smaller we know the scale factor will be less than 1.

Comment on this hint

Check which sides of the triangles correspond by using the equal angles.

For example, the sides, which are across from the 80 degree angle are corresponding, so are the ones opposite the 85 degree angles.



Comment on this hint

Now we can use the two green corresponding sides (the ones opposite 15 degrees) to find the scale factor since we know their lenghts.

In the smaller triangle the side is 3 units and in the bigger one it's 9 units.

So the scale factor is 3/9 = 1/3.

Comment on this hint

Now we can use the scale factor of 1/3 to find the missing side length.

Comment on this hint

12 units * 1/3 = 4 units

So x=4 units. Type in 4

Comment on this hint

Type your answer below (mathematical expression):

- 4

Submit Answer

Correct!
You are done with this problem!

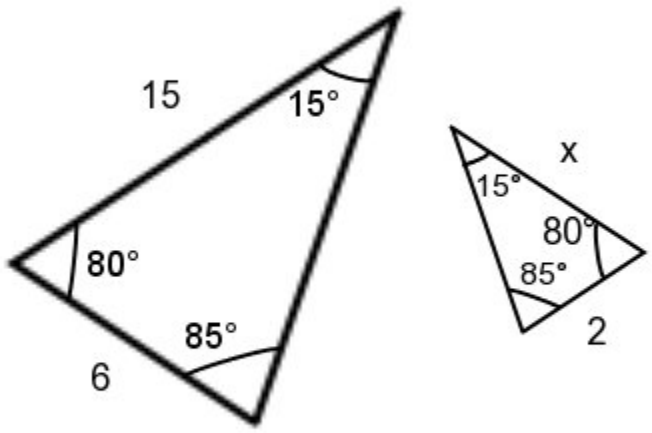
Comment on this problem

Assistment

Assistment #25695

You are previewing content.

The two triangles are similar. Find the length of the missing side, x.



Comment on this question

Request Help

Type your answer below (mathematical expression):

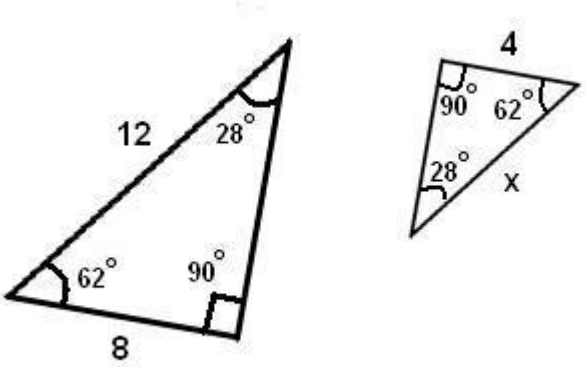
-

Submit Answer

Let's move on and figure out this problem
Let's look at the solution for a problem similar to the one in the red box above:

Problem:

The two triangles are similar. Find the length of the missing side, x.

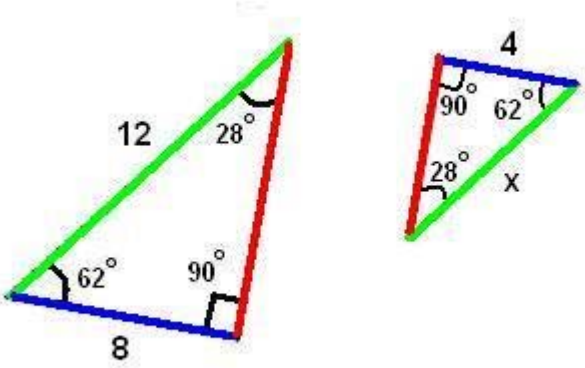


Solution:

We need to find the scale factor from the large triangle to the small one. Since the triangle gets smaller we know the scale factor will be less than 1.

Check which sides of the triangles correspond by using the equal angles.

For example, the sides, which are across from the 90 degree angle are corresponding, so are the ones opposite the 28 degree angles.



Now we can use the two blue corresponding sides (the ones opposit 28 degrees) to find the scale factor since we know their lenghts.

In the smaller triangle the side is 4 units and in the bigger one it's 8 units.

So the scale factor is 4/8 = 1/2.

Now we can use the scale factor of 1/2 to find the missing side length.

12 units * 1/2 = 6 units

So x=6 units. The answer is 6

Comment on this question

Select one:

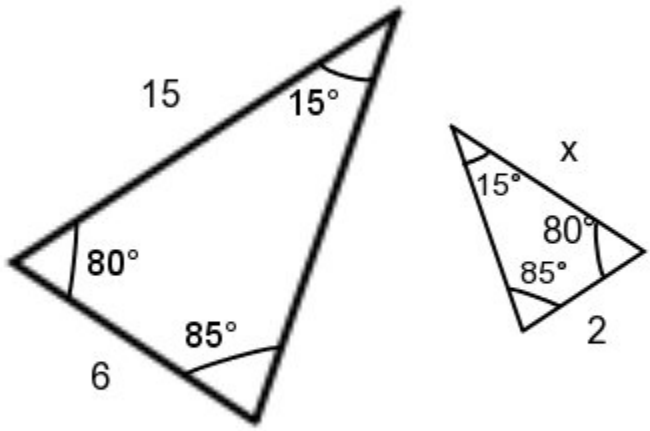
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

The two triangles are similar. Find the length of the missing side, x.



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 5. Please, type in 5

Comment on this hint

Type your answer below (mathematical expression):

- 5

Submit Answer

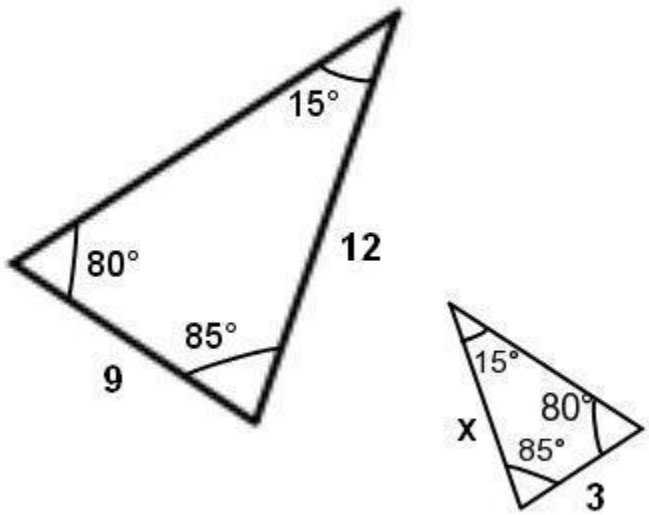
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25696

You are previewing content.

The two triangles are similar. Find the length of the missing side, x.



Comment on this question

Request Help

Type your answer below (mathematical expression):

-

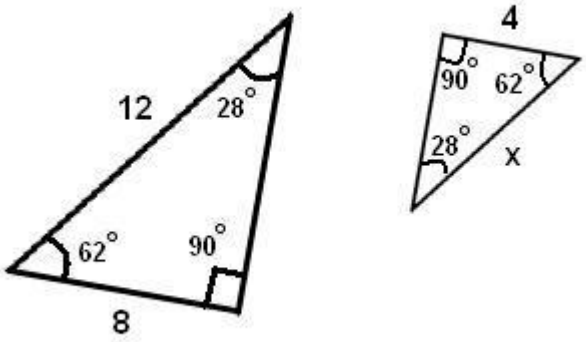
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Problem:

The two triangles are similar. Find the length of the missing side, x.

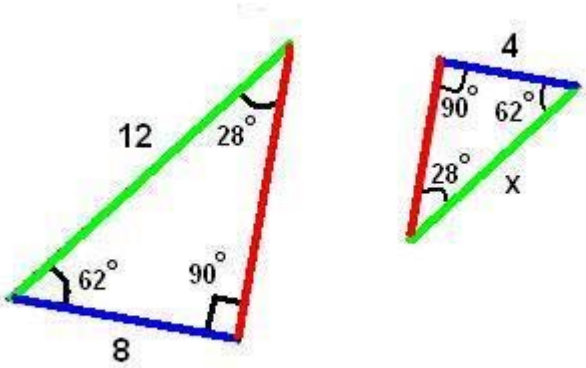


Solution:

We need to find the scale factor from the large triangle to the small one. Since the triangle gets smaller we know the scale factor will be less than 1.

Check which sides of the triangles correspond by using the equal angles.

For example, the sides, which are across from the 90 degree angle are corresponding, so are the ones opposite the 28 degree angles.



Now we can use the two blue corresponding sides (the ones opposit 28 degrees) to find the scale factor since we know their lenghts.

In the smaller triangle the side is 4 units and in the bigger one it's 8 units.

So the scale factor is 4/8 = 1/2.

Now we can use the scale factor of 1/2 to find the missing side length.

12 units * 1/2 = 6 units

So x=6 units. The answer is 6

Comment on this question

Select one:

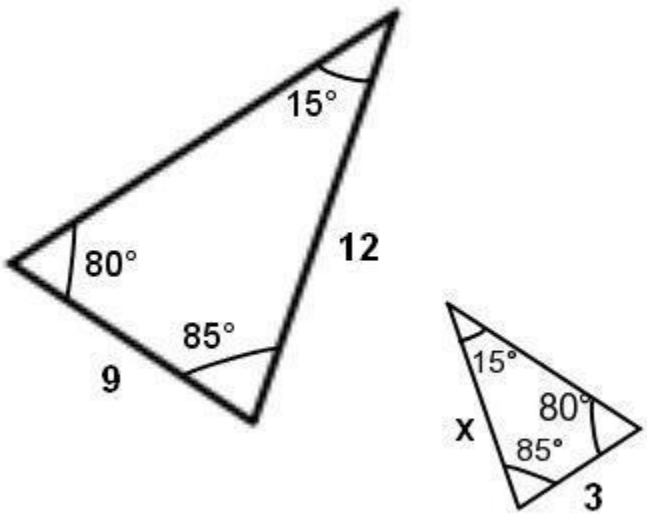
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

The two triangles are similar. Find the length of the missing side, x.



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 4. Type in 4

Comment on this hint

Type your answer below (mathematical expression):

- 4

Submit Answer

Correct!
You are done with this problem!

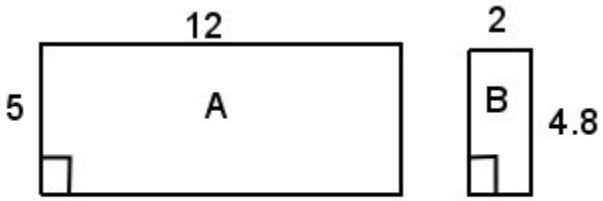
Comment on this problem

Assistment

Assistment #25789

You are previewing content.

Parallelogram A and B are similar. What is the scale factor from rectangle **B to A**?



Comment on this question

Request Help

Type your answer below (mathematical expression):

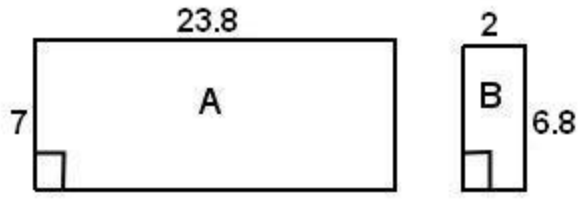
-

Submit Answer

Let's move on and figure out this problem
Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

Parallelogram A and B are similar. What is the scale factor from rectangle B to A?



Solution:

Notice that the side of value 2 corresponds to the side of value 7. Also, the side of value 6.8 corresponds to the side of value 23.8.

Another way to see scale factor here is asking how much would you multiply a side of B by to get the corresponding side of A?

(Since we are looking at how B scales up to A, we notice that A is bigger than B. This means that the scale factor will be greater than 1)

For these rectangles we ask what do we multiply by 2 to get 7 and does that same number multiply by 6.8 to get 23.8? We are looking for 2 * x = 7.

Because of fact families, if 2 * x = 7, we know that x = 7 / 2 = 3. 5

We can check this

2 * 3.5 = 7 and 6.8 * 3.5 = 23.8

So the scale factor is 3.5. It is the answer.

Comment on this question

Select one:

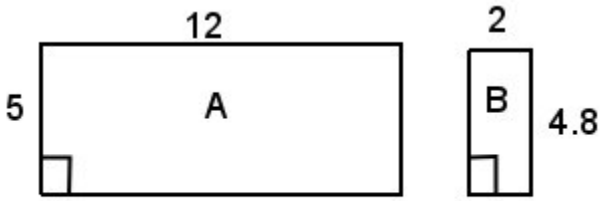
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Parallelogram A and B are similar. What is the scale factor from rectangle B to A?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 2.5. Please, type in 2.5

Comment on this hint

Type your answer below (mathematical expression):

- 2,.5

Submit Answer

Correct!
You are done with this problem!

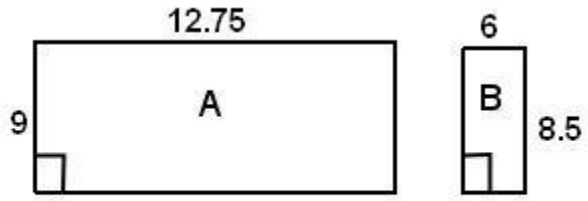
Comment on this problem

Assistment

Assistment #25791

You are previewing content.

Parallelogram A and B are similar. What is the scale factor from rectangle **B to A**?



Comment on this question

Request Help

Type your answer below (mathematical expression):

-

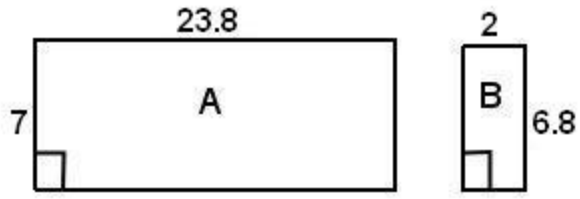
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem **similar** to the one in the red box above:

Problem:

Parallelogram A and B are similar. What is the scale factor from rectangle B to A?



Solution:

Notice that the side of value 2 corresponds to the side of value 7. Also, the side of value 6.8 corresponds to the side of value 23.8.

Another way to see scale factor here is asking how much would you multiply a side of B by to get the corresponding side of A?

(Since we are looking at how B scales up to A, we notice that A is bigger than B. This means that the scale factor will be greater than 1)

For these rectangles we ask what do we multiply by 2 to get 7 and does that same number multiply by 6.8 to get 23.8? We are looking for 2 * x = 7.

Because of fact families, if 2 * x = 7, we know that x = 7 / 2 = 3. 5

We can check this

2 * 3.5 = 7 and 6.8 * 3.5 = 23.8

So the scale factor is 3.5. It is the answer.

Comment on this question

Select one:

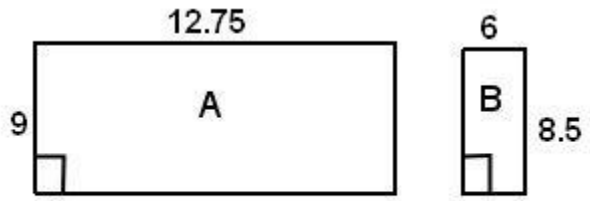
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Parallelogram A and B are similar. What is the scale factor from rectangle B to A?



Do your best, if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is 1.5. Please, type in 1.5

Comment on this hint

Type your answer below (mathematical expression):

- 1.5

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13084

Assistment

You are previewing content.
Which table does **not** show a linear relationship?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	0	1	2	3	4	5
Y	3	5	8	12	17	23

C

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

D

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Comment on this question

In order for the pattern in the table to be linear there must be a constant rate of change. This means that if the x values change evenly the y values must change evenly as well.

Comment on this hint

As you can see all the x values in the tables change evenly.

A

		+2	+2	+2	+2	+2
X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

		+1	+1	+1	+1	+1
X	0	1	2	3	4	5
Y	3	5	8	12	17	23

C

		+1	+1	+1	+1	+1
X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

D

		+3	+3	+3	+3	+3
X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Comment on this hint

Now find all the differences in the y values and see if they change evenly.

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10
		+2	+2	+2	+2	+2

B

X	0	1	2	3	4	5
Y	3	5	8	12	17	23
		+2	+3	+4	+5	+6

C

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15
		+2	+2	+2	+2	+2

D

X	0	3	6	9	12	15
Y	5	5	5	5	5	5
		0	0	0	0	0

Comment on this hint

When you look at the tables you see that in A, C and D the y values change evenly but in table B they do not. Therefore Table B is not linear. Select Table B.

Comment on this hint

Select one:

- A
- B
- C
- D

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13085

Assistment

You are previewing content.
Which equation would produce the table of values shown below?

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

Comment on this question

To find the equation, you need to find the slope and the y-intercept. Then you can place them into the y=mx+b form.

Comment on this hint

In order to find the slope or rate of change you just need to first check to see if the x's are changing evenly and then see what the constant rate of change is for y.

Comment on this hint

As we can see from the table, as x's changes evenly by +1, the constant rate of change for y is 2. This is the slope.

		+1	+1	+1	+1	+1
X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15
		+2	+2	+2	+2	+2

Comment on this hint

Next we need the y-intercept. It can be found by looking at the y coordinate when x is 0.

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

As we can see, when x = 0, y is equal to 11.

Comment on this hint

Now we have the slope m = 2 and the y-intercept b = 11. Therefore we can write the equation using the form

y = mx +b.

Comment on this hint

The equation that fits this table and graph is y = 2x + 11. Select y = 2x + 11

Comment on this hint

Select one:

- y = 2x + 11
- y = 4x + 7
- y = -2x + 9
- y = -2x + 5

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13086

Assistment

You are previewing content.
Booker T. Washington Middle School is going to have healthy snacks delivered to the school. They are charged $15 for the delivery and then $0.35 for each snack.

Which equation calculates the cost **C** for **n** students?

Comment on this question

Since n is the number of students, the total cost of snacks without delivery is 0.35 * n.

Comment on this hint

To calculate the total cost C, add the delivery cost to the cost of the snacks for the n students mentioned above.

Comment on this hint

Cost = Delivery + Cost for the actual snacks (.35 for each)
C = 15 + .35n
Select C = 15 + .35n

Comment on this hint

Select one:

- C = .35 - 15n
- C = 15 + .35n
- C = 15n + .35
- C = .35n - 15

Submit Answer
Correct!
You are done with this problem!

Comment on this problem

Assistment #13087

Assistment

You are previewing content.
Which table shows a **positive** rate of change?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

C

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Comment on this question

A positive rate of change means that as X increases, Y increases.

Comment on this hint

Notice that for table A, as X gets larger, Y gets smaller. Table A has a **negative** rate of change. Now Check B and C.

A

		+2	+2	+2	+2	+2
X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10
		-2	-2	-2	-2	-2

Comment on this hint

As you can see from the image below only B has a **positive** rate of change (as x increases +1, y increases also +2). Notice that all of the tables are linear since the change is always constant (even for C where the change is 0) but B is the only one that is positive. Select B

B

		+1	+1	+1	+1	+1
X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15
		+2	+2	+2	+2	+2

C

		+2	+2	+2	+2	+2
X	0	3	6	9	12	15
Y	5	5	5	5	5	5
		0	0	0	0	0

Comment on this hint

Select one:

- A
- B
- C

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13088

Assistment

You are previewing content.
Which table shows a **negative** rate of change?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

C

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Comment on this question
A negative rate of change means that as X increases, Y decreases.
Comment on this hint
Notice that for table B, as X gets larger, Y gets larger. Table B has a **positive** rate of change.
Now check tables A and C.

B

		+1	+1	+1	+1	+1
X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15
		+2	+2	+2	+2	+2

Comment on this hint
As you can see from the image below only A has a **negative** rate of change (as x increases +2, y decreases -2).
Notice that all of the tables are linear since the change is always constant (even for C where the change is 0) but A is the only one that is negative. Select A.

A

		+2	+2	+2	+2	+2
X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10
		-2	-2	-2	-2	-2

C

		+3	+3	+3	+3	+3
X	0	3	6	9	12	15
Y	5	5	5	5	5	5
		0	0	0	0	0

Comment on this hint

Select one:

- A
- B
- C

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13089

Assistment

You are previewing content.
Which table shows a rate of change of zero?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

C

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Comment on this question

A rate of change of zero means that regardless of what X is, Y remains the same.

Comment on this hint

Notice that for table B, as X gets larger, Y gets larger. Table B has a **positive** rate of change.
Now check tables A and C.

B

		+1	+1	+1	+1	+1
X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15
		+2	+2	+2	+2	+2

Comment on this hint

You can see from the image above, table C has a **rate of change of zero**. Choose answer choice C.

A

	+2	+2	+2	+2	+2
X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10
	-2	-2	-2	-2	-2

C

		+2	+2	+2	+2	+2
X	0	3	6	9	12	15
Y	5	5	5	5	5	5
		0	0	0	0	0

Comment on this hint

Select one:

- A
- B
- C

Submit Answer

Correct!

You are done with this problem!

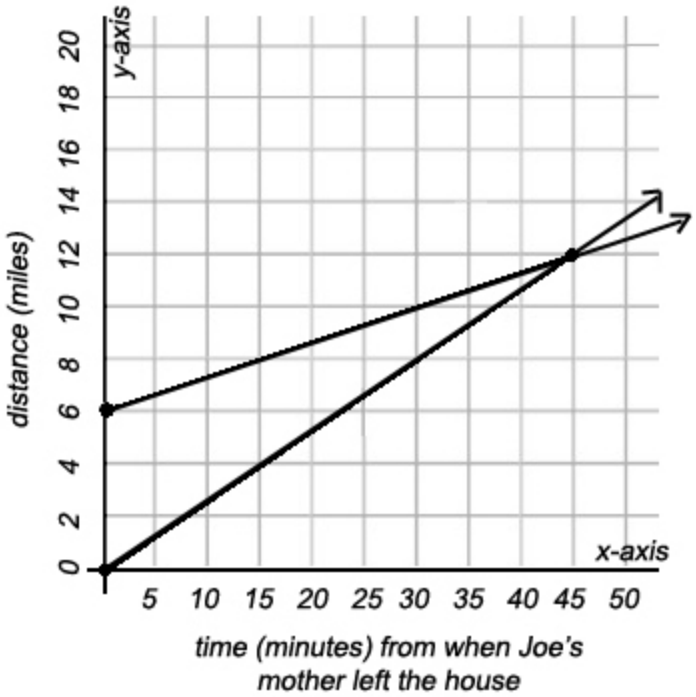
Comment on this problem

Assistment #13090

Assistment

You are previewing content.
Joe went for a bike ride but he forgot his lunch. He was 6 miles away when his mother noticed. His mother got on her bike and rode after him. The graph shows the distance Joe and his mother have traveled starting from the time she left the house.

How many **miles** from home does Joe's mother catch up to him?

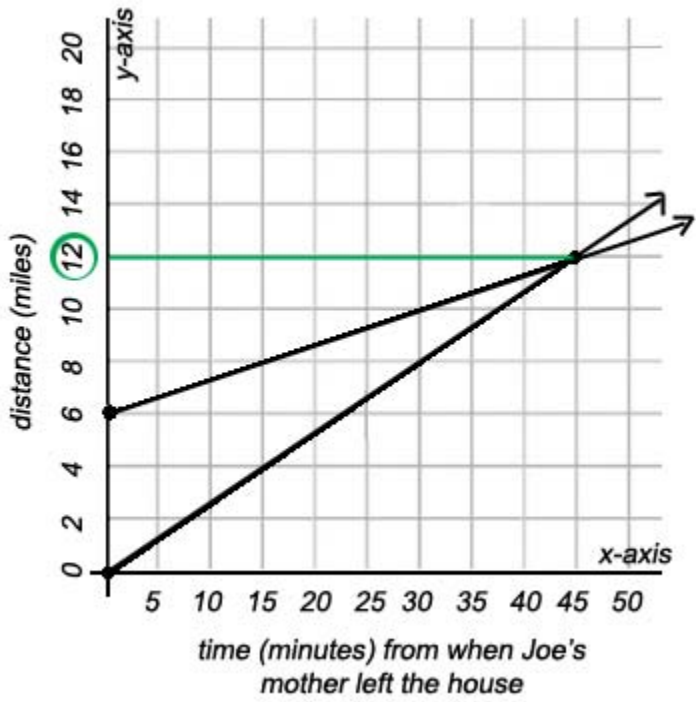


Comment on this question

Joe's mother catches up to him when they have both traveled the **same distance**.

Comment on this hint

They have traveled the same distance at 12 miles. That is the point where the two graphs intersect.



Comment on this hint

Joe's mother catches up to him after 12 miles. Type in 12.

Comment on this hint

Type your answer below (mathematical expression):

- 12

Submit Answer

Correct!

You are done with this problem!

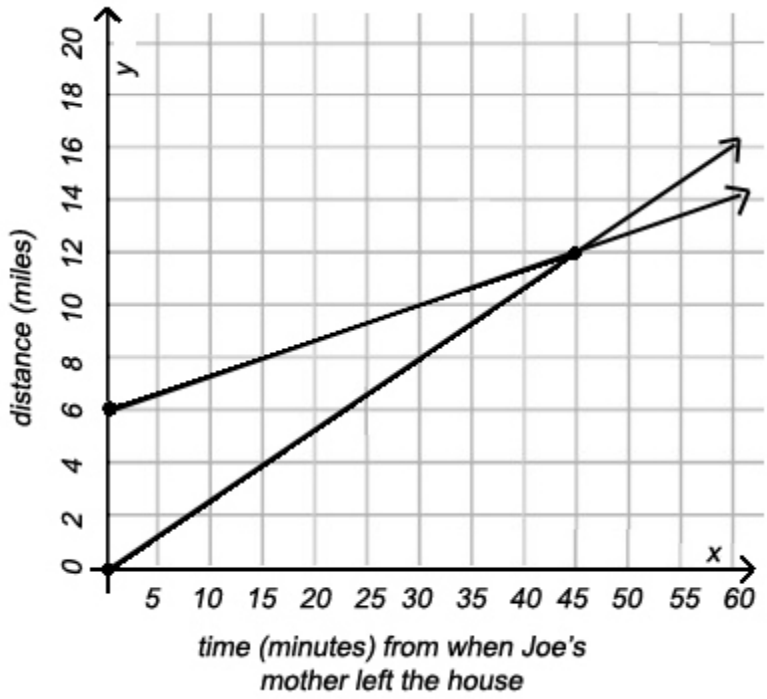
Comment on this problem

Assistment #13092

Assistment

You are previewing content.
Joe went for a bike ride but he forgot his lunch. He was 6 miles away when his mother noticed. His mother got on her bike and rode after him. The graph shows the distance Joe and his mother have traveled starting from the time she left the house.

If Joe's mother keeps riding at the same speed, how far will she have gone **after a total of 1 hour** from when she left home?



Comment on this question

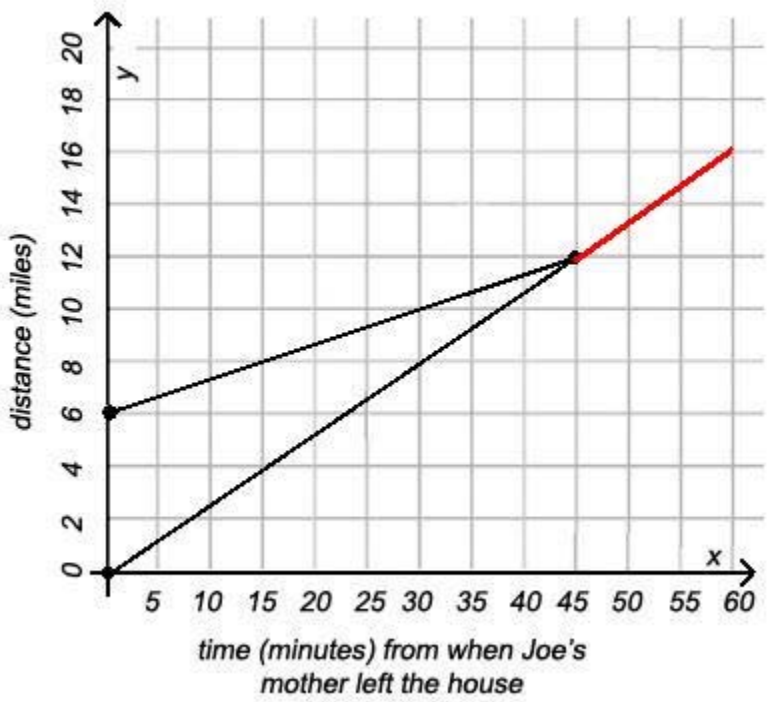
Remember, one hour is 60 minutes.

Comment on this hint

If we follow Joe's mother's line, where will it be after one hour?

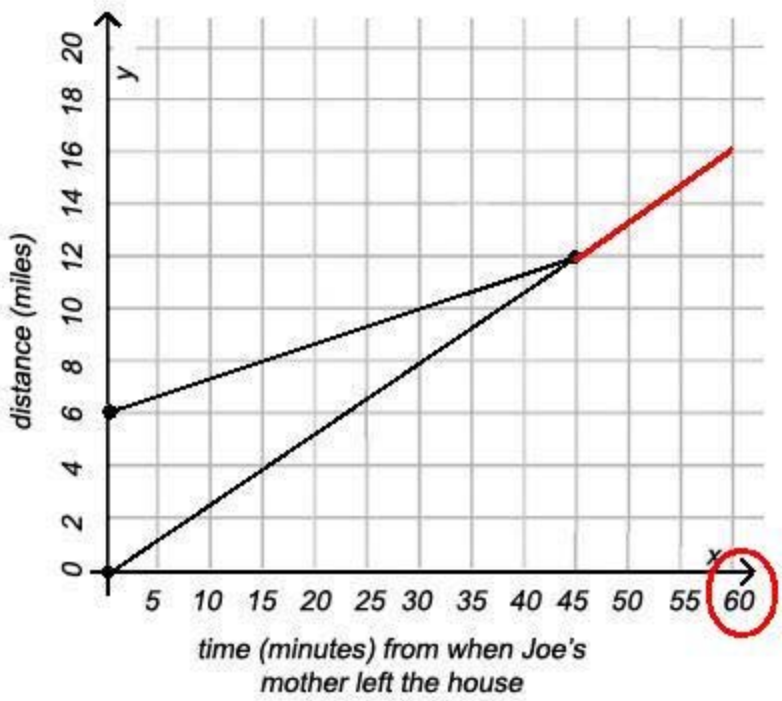
Comment on this hint

Take a look at this line extended.



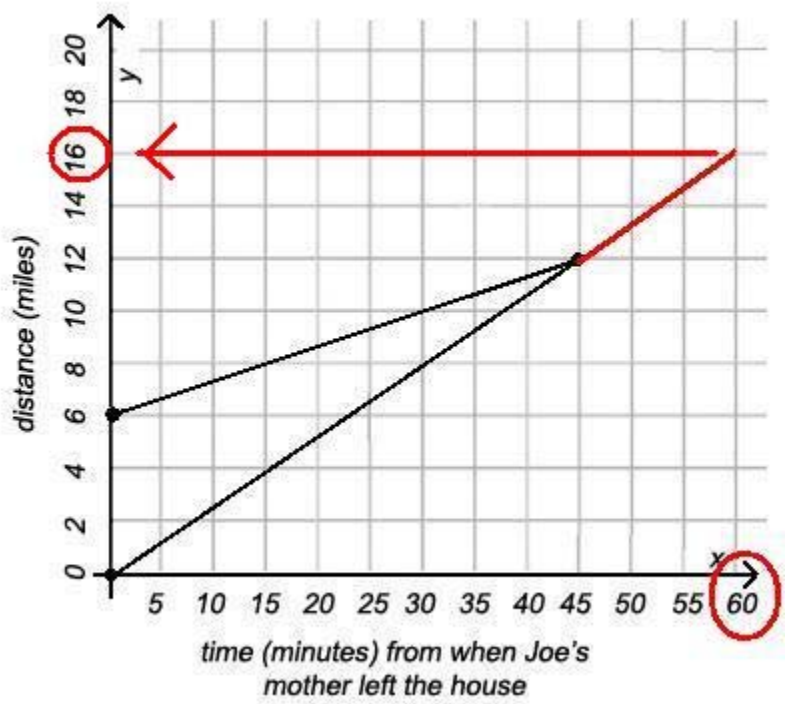
Comment on this hint

Find the point where his mother has biked for 1 hour or 60 minutes.



Comment on this hint

If she rides at the same pace for 1 hour or 60 minutes she will have ridden 16 miles. Type in 16.



Comment on this hint

Type your answer below:

- 16

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13099

Assistment

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 30 + 5w

How many **dollars is she saving each week**?

Comment on this question

To find how much she is saving each week, find the difference between how much she has saved after 0 weeks and after 1 week.

Comment on this hint

After 0 weeks, she has saved:
S = 30 + 5 w
$S_0 = 30 + 5 * 0$
$S_0 = 30 + 0$
$S_0 = 30$
After 1 week, she has saved:
S = 30 + 5 w
$S_1 = 30 + 5 * 1$
$S_1 = 30 + 5$
$S_1 = 35$
Here is a table showing what we now know.

Week	Savings
0	30
1	35

Comment on this hint

The difference between her savings after 0 and 1 weeks is 35 - 30 = 5. Notice that 5 is the coefficient of **w**, and can be read from the equation as long as it is in the form y=mx+b.
Type in 5.

Comment on this hint

Type your answer below (mathematical expression):

- 5

Submit Answer
Correct!
You are done with this problem!

Comment on this problem

Assistment #13100

Assistment

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 30 + 5w

How many **dollars did her grandparents give her**?

Comment on this question
The amount her grandparents gave her is what she has in the beginning after 0 weeks.

Comment on this hint

After 0 weeks, she has saved:
S = 30 + 5 w
S_0 = 30 + 5 * 0
S_0 = 30 + 0
S_0 = 30

This is the sum that her grandparents gave Ming to start saving.

Comment on this hint
You could also have found the answer by looking at the constant term in the equation written in y=mx+**b** form. The correct answer is 30. Type in 30.

Comment on this hint
Type your answer below (mathematical expression):

- 30

Submit Answer
Correct!
You are done with this problem!

Comment on this problem

Assistment #13103

Assistment

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the savings **S** she has after **w** weeks:
S = 30 + 5w

What is the coefficient of the **w** in the equation?

Comment on this question

The coefficient is the value that w is multiplied by.

Comment on this hint

You can look at the equation and the coefficient of x is the number multiplied by x.
S = 30 + 5w

Comment on this hint

So the coeficient of w is 5. Type in 5

Comment on this hint

Type your answer below (mathematical expression):

- 5

Submit Answer

Correct!
You are done with this problem!

Comment on this problem

Assistment #13106

Assistment

You are previewing content.
Use the properties of equality to solve the equation for **x**.

2x - 40 = 60

What is the value of x?

Comment on this question

Start by separating the variable expressions from the constants by adding 40 to both sides.

Comment on this hint

Adding 40 to both sides gives you:

$$\begin{aligned} 2x - 40 + 40 &= 60 + 40 \\ 2x &= 60 + 40 \\ 2x &= 100 \end{aligned}$$

Comment on this hint

We divide both sides by 2 and this gives:

$$\begin{aligned} 2x/2 &= 100/2 \\ x &= 100/2 \\ x &= 50 \end{aligned}$$

The value of x is 50! Type in 50.

Comment on this hint

Type your answer below (mathematical expression):

- 50

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13107

Assistment

You are previewing content.
Use the properties of equality to solve the equation for **x**.

4 +2x = 10x - 12

What is the value of x?

Comment on this question

Start by using the properties of equality to get the variable terms on one side and the constants on the other.

Comment on this hint

Adding 12 to both sides gives you:

12 + 4 + 2x = 10x - 12 + 12
12 + 4 + 2x = 10x

Comment on this hint

Subtracting 2x from both sides gives you:

12 + 4 + 2x - 2x = 10x - 2x
12 + 4 = 10x - 2x
16 = 8x

Comment on this hint

Dividing both sides by 8 gives us:

16/8 = 8x/8
2 = x

Type in 2.

Comment on this hint

Type your answer below (mathematical expression):

- 2

Submit Answer
Correct!
You are done with this problem!

Comment on this problem

Assistment #13108

Assistment

You are previewing content.
Use the properties of equality to solve the equation for **x**.

4(6 + x) = 2x

What is the value of x?

Comment on this question

Start by distributing the 4 into the expression in parenthesis.

Comment on this hint

Distributing the 4 into the expression in parenthesis gives you:

$$\begin{aligned} 4(6 + x) &= 2x \\ 4 * 6 + 4 * x &= 2x \\ 24 + 4x &= 2x \end{aligned}$$

Comment on this hint

Subtracting 24 from both sides gives you this:

$$\begin{aligned} 24 + 4x &= 2x \\ 24 - 24 + 4x &= 2x - 24 \\ 4x &= 2x - 24 \end{aligned}$$

Comment on this hint

Next, you can subtract 2x from both sides:

$$\begin{aligned} 4x &= 2x - 24 \\ 4x - 2x &= 2x - 2x - 24 \\ 4x - 2x &= -24 \end{aligned}$$

Simplify 4x - 2x = -24 by combining like terms.
2x = -24

Comment on this hint

Dividing both sides by 2 gives you:

$$\begin{aligned} 2x/2 &= -24/2 \\ x &= -12 \end{aligned}$$

Type in -12

Comment on this hint

Type your answer below (mathematical expression):

- -12

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13109

Assistment

You are previewing content.
Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

What is the equation for Cost (**C**) if the school buys **s** snacks from Company A?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Comment on this question
The initial cost is $15. And it is increased by $0.25 for each snack they buy.
Comment on this hint
The cost of snacks for **s** students would be $0.25**s**.
Comment on this hint
The total cost is the 15 dollars and the 0.25s or in algebra it would be C = 15 + 0.25s.
So the equation for the cost is C = 0.25s + 15. Select C = 0.25s + 15.
Comment on this hint
Select one:

- C = 0.25 + 15
- C = 0.25s + 15
- C = 15.25s+ 15
- C = 15s+ 15.25

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

Assistment #13111

Assistment

You are previewing content.
Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables above show the cost for each company.

The equations for Cost (**C**) for **s** snacks are:
C = 0.25s + 15 for Company A
C = 0.5s for Company B

What is the number of snacks the school must buy for the cost to be equal for the two companies?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Comment on this question

Given the two equations, you must set the Cost equal to each other. That is:

Cost for company A = Cost for company B
0.25s + 15 = 0.5s

Comment on this hint

Now we subtract 0.25s from both sides and we get:

0.25s + 15 = 0.5s
0.25s - 0.25s + 15 = 0.5s - 0.25s
15 = 0.25s

Comment on this hint

To get the final result we can divide both sides by 0.25. This way we find s' value.

$0.25s/0.25 = 15/0.25$

$s = 60$

Comment on this hint

We can verify the result by substituting '60' in each equation to check if the costs are the same.
C = 0.25 * 60 + 15 for Company A
C = 15 + 15
C = 30

C = 0.5 * 60 for Company B
C = 30

If you buy 60 snacks from both companies, it would cost the same price. Please enter 60.

Comment on this hint

Type your answer below (mathematical expression):

- 60

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13116

Assistment

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the savings **S** she has after **w** weeks:
S = 30 + 5w

After how many weeks will Ming be able to buy a bike that costs $125?

Comment on this question

Ming needs $125 to buy the bike. So the value of S in the equation is given to be 125:

125 = 30 + 5w

Solve for w.

Comment on this hint

To simplify the equation, you need to separate the variable expressions from the constants using the properties of equality.

Comment on this hint

Subtracting both sides by 30 gives you:
125 - 30 = 30 - 30 + 5w
125 - 30 = 5w

Comment on this hint

Simplifying the equation 125 - 30 = 5w by combining like terms gives you:
95 = 5w

Comment on this hint

Dividing both sides by 5 gives you:
95/5 = 5w/5
19 = w

Ming will be able to buy a bike costing $125 after 19 weeks.
Type in 19.

Comment on this hint

Type your answer below (mathematical expression):

- 19

Submit Answer

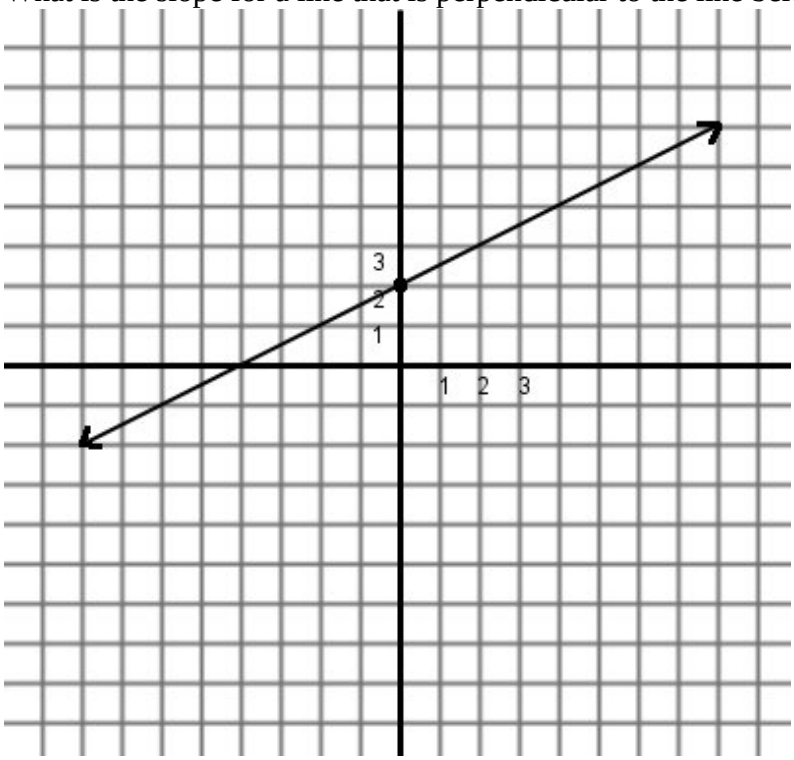
Correct!
You are done with this problem!

Comment on this problem

Assistment #14147

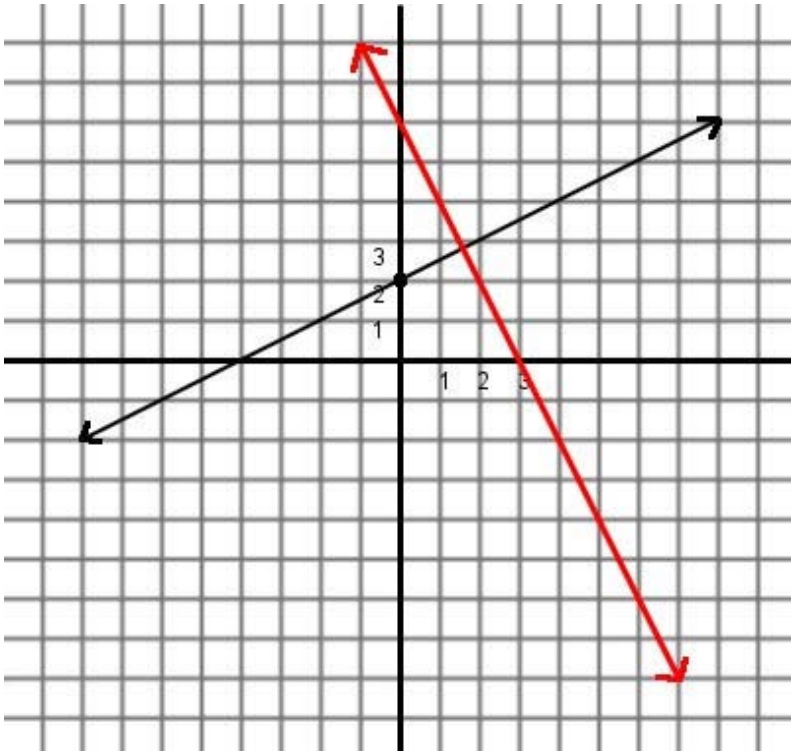
Assistment

You are previewing content.
What is the slope for a line that is perpendicular to the line below?



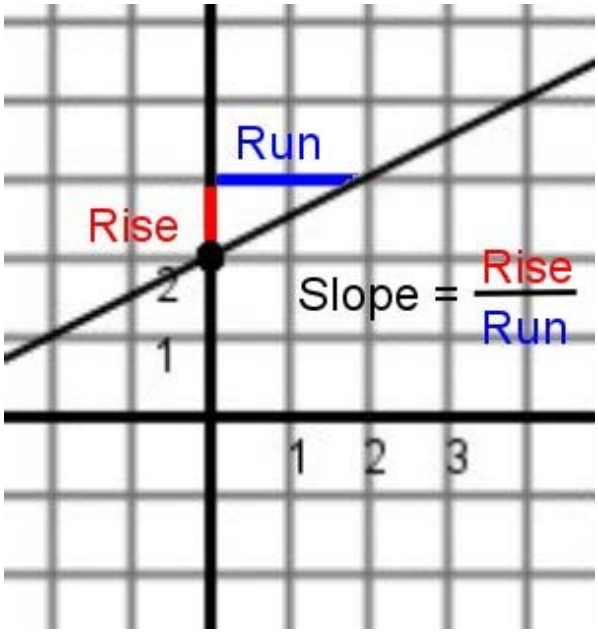
Comment on this question

The slope of a perpendicular line is similar to the slope of the original line. First the rise and run are just reversed and second if the original line slopes up (or have a positive slope, as in this problem) the perpendicular line will slope down (or have a negative slope).



Comment on this hint

First find the slope of the original line. Remember the slope is the rise over the run. Here, the rise is 1 and the run is 2.

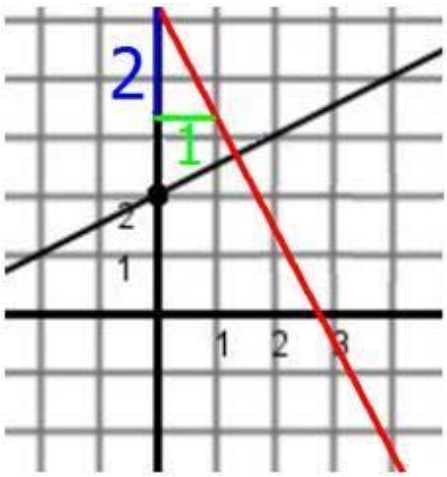


Comment on this hint

So the slope is 1/2. This is the slope of the original line, now find the slope of a perpendicular line.

Comment on this hint

The slope of the perpendicular line is 2/1
since the rise and the run have been reversed. It is also negative since the line is decreasing (or has a negative slope).



Comment on this hint

Therefore the slope of the line is -2/1 or just -2. Type in -2.

Comment on this hint

Type your answer below (mathematical expression):

- -2

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #14151

Assistment

You are previewing content.
Which one of these statements is **not** true for the equation y = -4x + 3?

Comment on this question

Write A, B, C, and D on your paper then read them and write next to them whether they are true or false. The one that is **not** true is the answer.

Comment on this hint

A is true because, as we know from the formula y = m*x+b, where m is the slope. In our example m is -4, so it is negative. We create a list with the results we find:
A. Slope is negative [True]
B. y-intercept is positive
C. passes through (4, 19)
D. passes through (3, -9)

Comment on this hint

For B, you can find the y-intercept is when x = 0. So if you substitute in 0 for x you get:

y = -4x + 3

y = -4 * 0 + 3

y = 3

Also the y -intercept is b in the equation y = mx + b. So in the equation y = -4x + 3 the y-intercept is 3.

The result is positive and we can check B true.
A. Slope is negative [True]
B. y-intercept is positive [True]
C. passes through (4, 19)
D. passes through (3, -9)

Comment on this hint

To verify C, we simply substitute the coordinates 4 for x and 19 for y into the equation and see if there is equality between both sides.
y = -4x + 3

19 = -4 * 4 + 3
19 = -16 + 3
19 = -13

False! Check C false and, lastly, see if D is true or false.
A. Slope is negative [True]
B. y-intercept is positive [True]
C. passes through (4, 19) [False]
D. passes through (3, -9)

Comment on this hint

The same way we substitute the numbers into the equation. (3 for x and -8 for y)

y = -4x + 3
-8 = -4 * 3 + 3
-8 = -12 + 3
-8 = -8

We update our list accordingly:
A. Slope is negative [True]
B. y-intercept is positive [True]
C. passes through (4, 19) [False]
D. passes through (3, -9) [True]

Comment on this hint
The correct answer is C, which is the false statement we we're looking for.
Comment on this hint
Select one:

- A. Slope is negative
- B. y-intercept is positive
- C. passes through (4, 19)
- D. passes through (3, -9)

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

Assistment #14154

Assistment

You are previewing content.
What is the slope of the line that fits the data given?

x	2	3	4	5	6	
y	-4	-5.5	-7	-8.5	-10	

Comment on this question

The slope can be measured by finding out how much y changes for every change of x by 1.

Comment on this hint

The table shows values of x changing by 1. How much does y change each time the x value changes by 1? This will be the slope.

Comment on this hint

As x increases by 1, y is decreasing by -1.5. So the slope will be -1.5.

Comment on this hint

Type your answer below:

- -1.5

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #14155

Assistment

You are previewing content.
What is the y-intercept of the line that fits the data given?

Earlier, you found that the slope was -1.5.

x	2	3	4	5	6	
y	-4	-5.5	-7	-8.5	-10	

Comment on this question

Draw the table on your paper and add room for the values of x to go back to zero. Fill in the values of x= 1 and x=0 and the corresponding values of y. What is the value of y when x is 0?

Comment on this hint

The filled-in table is shown below. What is the y-intercept?

x	0	1	2	3	4	5	6	
y	-1	-2.5	-4	-5.5	-7	-8.5	-10	

Comment on this hint

Since y = -1 when x = 0, the y-intercept is -1. Enter -1.

Comment on this hint

Type your answer below:

- -1

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25307

Assistment

You are previewing content.

Which table does **not** show a linear relationship?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	0	1	2	3	4	5
Y	3	5	8	12	17	23

C

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

D

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Comment on this question

Request Help

Select one:

- A
- B
- C
- D

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Which table does **not** show a linear relationship?

A

X	1	2	3	4	5	6
Y	14	16	18	20	22	24

B

X	-6	-4	-2	0	2	4
Y	9	9	9	9	9	9

C

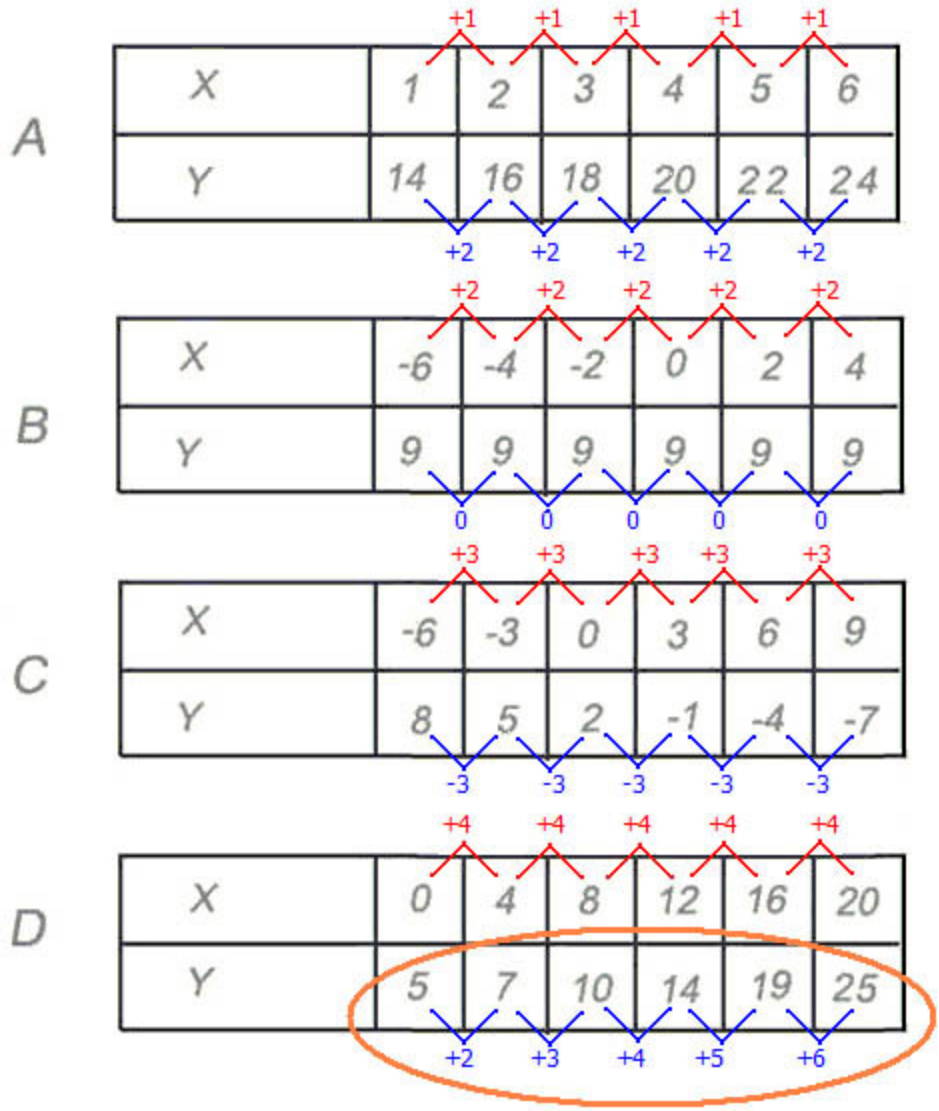
X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

D

X	0	4	8	12	16	20
Y	5	7	10	14	19	25

Solution:

(For your convenience, the difference between the values are displayed above and below)



The equation is linear if the y values will change evenly as the x values change at the same rate as well. So we are looking for the table where the x or y values that do **not** change evenly.

The x values from all the tables change in a constant way. Now look for y values that do **not** change at the same rate.

As you can see, the y values from table D do **not** change at constant rate. Therefore, Table D is not linear.

The answer is Table D.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which table does **not** show a linear relationship?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	0	1	2	3	4	5
Y	3	5	8	12	17	23

C

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

D

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is Table B. Select B.

Comment on this hint

Select one:

- A
- B
- C
- D

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25762

Assistment

You are previewing content.
Which equation would produce the table of values shown below?

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

Comment on this question

Request Help

Select one:

- y = 2x + 11
- y = 4x + 7
- y = -2x + 9
- y = -2x + 5

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

What is the equation that would produce the table of values shown below?

X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

Solution:

To find the equation, you need to find the slope and the y-intercept. Then you can place them into the y=mx+b form.

In order to find the slope or rate of change you just need to first check to see if the x's are changing evenly

and then see what the constant rate of change is for y.

As we can see from the table, as x's changes evenly by +3, the constant rate of change for y is -3. This is the slope.

		+3	+3	+3	+3	+3
X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7
		-3	-3	-3	-3	-3

Next we need the y-intercept. It can be found by looking at the y coordinate when x is 0.

X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

As we can see, when x = 0, y is equal to 2.

Now we have the slope m = 3 and the y-intercept b = 2. Therefore we can write the equation using the form y = mx +b.

The equation that fits this table and graph is y = 3x + 2.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which equation would produce the table of values shown below?

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is y = 2x + 11. Select y = 2x + 11

Comment on this hint

Select one:

- y = 2x + 11
- y = 4x + 7
- y = -2x + 9
- y = -2x + 5

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25310

Assistment

You are previewing content.
Booker T. Washington Middle School is going to have healthy snacks delivered to the school. They are charged $15 for the delivery and then $0.35 for each snack.

Which equation calculates the cost **C** for **n** students?

Comment on this question

Request Help

Select one:

- C = .35 - 15n
- C = 15 + .35n
- C = 15n + .35
- C = .35n - 15

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

A car repair garage is charging a costumer $20 for the inspection and $35 for each replaced part.

Which equation calculates the cost **C** for the costumer if the mechanic finds and replaces **n** parts?

Solution:

If n is the total number of parts replaced, then the total cost **without** inspection is 35 * n.

Now we just add the inspection fee to the cost for replacing n parts to get the final cost.

C = 20 + 35n

The final answer is C = 20 +35n

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Booker T. Washington Middle School is going to have healthy snacks delivered to the school. They are charged $15 for the delivery and then $0.35 for each snack.

Which equation calculates the cost C for n students?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is C = 15 + .35n. Select C = 15 + .35n.

Comment on this hint

Select one:

- C = .35 - 15n
- C = 15 + .35n
- C = 15n + .35
- C = .35n - 15

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25317

Assistment

You are previewing content.

Which table shows a **positive** rate of change?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

C

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Comment on this question

Request Help

Select one:

- A
- B
- C

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Which table shows a **positive** rate of change?

A

X	1	2	3	4	5	6
Y	14	16	18	20	22	24

B

X	-6	-4	-2	0	2	4
Y	9	9	9	9	9	9

C

X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

Solution:

(For your convenience, the difference between the values are displayed above and below)

A

	+1	+1	+1	+1	+1	
X	1	2	3	4	5	6
Y	14	16	18	20	22	24
	+2	+2	+2	+2	+2	

B

	+2	+2	+2	+2	+2	
X	-6	-4	-2	0	2	4
Y	9	9	9	9	9	9
	0	0	0	0	0	

C

	+3	+3	+3	+3	+3	
X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7
	-3	-3	-3	-3	-3	

A positive rate of change means that as X increases, Y increases.

Notice that for table C, as X gets larger, Y gets smaller. So table C has a **negative** rate of change.

As you can see from the image, above only A has a **positive** rate of change (as x increases +1, y increases also +2).

The answer is A.

Comment on this question

Select one:

- I have read the example and now I am ready to try again

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which table shows a **positive** rate of change?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

C

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is table B. Select B.

Comment on this hint

Select one:

- A

- B
- C

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25326

Assistment

You are previewing content.

Which table shows a **negative** rate of change?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

C

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Comment on this question

Request Help

Select one:

- A
- B
- C

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Which table shows a **negative** rate of change?

A

X	1	2	3	4	5	6
Y	14	16	18	20	22	24

B

X	-6	-4	-2	0	2	4
Y	9	9	9	9	9	9

C

X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

Solution:

(For your convenience, the difference between the values are displayed above and below)

A

X	1	2	3	4	5	6
	+1	+1	+1	+1	+1	
Y	14	16	18	20	22	24
	+2	+2	+2	+2	+2	

B

X	-6	-4	-2	0	2	4
	+2	+2	+2	+2	+2	
Y	9	9	9	9	9	9
	0	0	0	0	0	

C

X	-6	-3	0	3	6	9
	+3	+3	+3	+3	+3	
Y	8	5	2	-1	-4	-7
	-3	-3	-3	-3	-3	

A negative rate of change means that as X increases, Y decreases.

Notice that for table A, as X gets larger, Y gets larger. Table A has a **positive** rate of change.

As you can see from the image below only C has a **negative** rate of change (as x increases +3, y decreases -3).

The answer is C.

Comment on this question

Select one:

- I have read the example and now I am ready to try again

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which table shows a **negative** rate of change?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

C

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is Table A. Select A.

Comment on this hint

Select one:

- A

- B
- C

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25403

You are previewing content.

Which table shows a rate of change of zero?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

C

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Comment on this question

Request Help

Select one:

- A
- B
- C

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Which table shows a rate of change of zero?

A

X	1	2	3	4	5	6
Y	14	16	18	20	22	24

B

X	-6	-4	-2	0	2	4
Y	9	9	9	9	9	9

C

X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

Solution:

(For your convenience, the difference between the values are displayed above and below)

A

	+1	+1	+1	+1	+1	
X	1	2	3	4	5	6
Y	14	16	18	20	22	24
	+2	+2	+2	+2	+2	

B

	+2	+2	+2	+2	+2	
X	-6	-4	-2	0	2	4
Y	9	9	9	9	9	9
	0	0	0	0	0	

C

	+3	+3	+3	+3	+3	
X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7
	-3	-3	-3	-3	-3	

A rate of change of zero means that regardless of what X is, Y remains the same.

Notice that for table A, as X gets larger, Y gets larger. Table A has a **positive** rate of change.

You can see from the image above, table B has a **rate of change of zero**, because the y values remain constant.

The answer is B.

Comment on this question

Select one:

- I have read the example and now I am ready to try again

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which table shows a rate of change of zero?

A

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

B

X	-3	-2	-1	0	1	2
Y	5	7	9	11	13	15

C

X	0	3	6	9	12	15
Y	5	5	5	5	5	5

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is Table C. Select C.

Comment on this hint

Select one:

- A
- B
- C

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25308

Assistment

You are previewing content.

Which table does **not** show a linear relationship?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	23	22	20	17	12	7

D

X	-1	2	5	7	10	13
Y	12	14	16	18	20	22

Comment on this question

In order for the pattern in the table to be linear there must be a constant rate of change. This means that if the x values change evenly the y values must change evenly as well.

Comment on this hint

As you can see all the x values in the tables change evenly.

A

		+1	+1	+1	+1	+1
X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

		+2	+2	+2	+2	+2
X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

		+2	+2	+2	+2	+2
X	14	16	18	20	22	24
Y	23	22	20	17	12	7

D

		+3	+3	+3	+3	+3
X	-1	2	5	7	10	13
Y	12	14	16	18	20	22

Comment on this hint

Now find all the differences in the y values and see if they change evenly.

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13
		0	0	0	0	0

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4
		+1	+1	+1	+1	+1

C

X	14	16	18	20	22	24
Y	23	22	20	17	13	8
		-1	-2	-3	-4	-5

D

X	-1	2	5	7	10	13
Y	12	14	16	18	20	22
		+2	+2	+2	+2	+2

Comment on this hint

When you look at the tables, you can see that the x values change at the same constant rate. However, the y values change evenly only in the table A, B and D but **not** in table C. Therefore Table C is not linear. Select Table C.

Comment on this hint

Select one:

- A
- B
- C
- D

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25763

Assistment

You are previewing content.

Which equation would produce the table of values shown below?

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

Comment on this question

To find the equation, you need to find the slope and the y-intercept. Then you can place them into the y=mx+b form.

Comment on this hint

In order to find the slope or rate of change you just need to first check to see if the x's are changing evenly and then see what the constant rate of change is for y.

Comment on this hint

As we can see from the table, as x's changes evenly by +2, the constant rate of change for y is -2. This is the slope.

		+2	+2	+2	+2	+2
X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10
		-2	-2	-2	-2	-2

Comment on this hint

Next we need the y-intercept. It can be found by looking at the y coordinate when x is 0.

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

As we can see, when x = 0, y is equal to 16.

Comment on this hint

The equation that fits this table and graph is y = -2x + 16. Select y = -2x + 16

Comment on this hint

Select one:

- y = 4x + 18
- y = x + 16
- y = -2x + 16
- y = 2x + 14

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25311

Assistment

You are previewing content.
Booker T. Washington Middle School is going to have healthy snacks delivered to the school. They are charged $5 for the delivery and then $1.5 for each snack.

Which equation calculates the cost **C** for **n** students?

Comment on this question

Since n is the number of students, the total cost of snacks without delivery is 1.5 * n.

Comment on this hint

To calculate the total cost C, add the delivery cost to the cost of the snacks for the n students mentioned above.

Comment on this hint

Cost = Delivery + Cost for the actual snacks (1.5 for each)
C = 5 + 1.5n
Select C = 5 + 1.5n

Comment on this hint

Select one:

- C = 1.5 - 5n
- C = 1.5n + 5
- C = 5 + 1.5n
- C = 1.5n - 5

Submit Answer

Correct!
You are done with this problem!

Comment on this problem

Assistment #25323

Assistment

You are previewing content.

Which table shows a **positive** rate of change?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	22	20	18	16	14	12

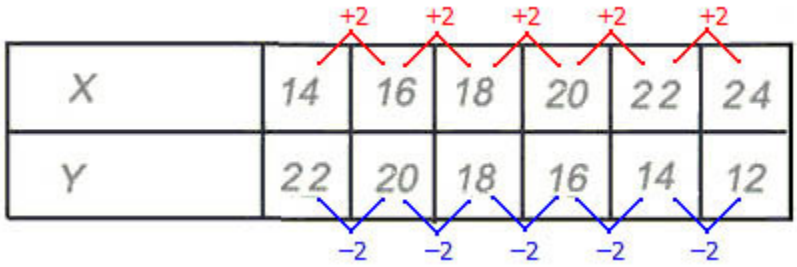
Comment on this question

A positive rate of change means that as X increases, Y increases.

Comment on this hint

Notice that for table C, as X gets larger, Y gets smaller. Table C has a **negative** rate of change. Now check A and B.

C



Comment on this hint

As you can see from the image below only B has a **positive** rate of change (as x increases +2, y increases also +1). Notice that all of the tables are linear since the change is always constant (even for A where the change is 0) but B is the only one that is positive. Select B.

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

(+1 above each X step; 0 below each Y step)

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

(+2 above each X step; +1 below each Y step)

Comment on this hint

Select one:

- A
- B
- C

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25327

Assistment

You are previewing content.

Which table shows a **negative** rate of change?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	22	20	18	16	14	12

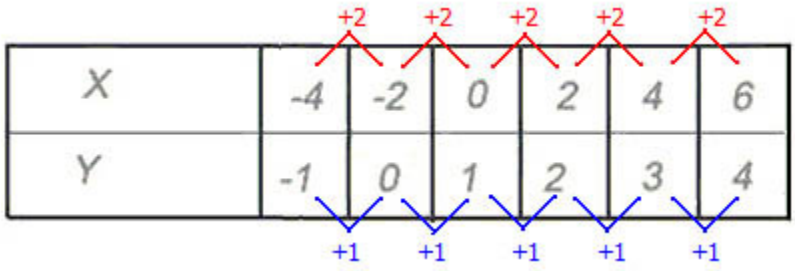
Comment on this question

A negative rate of change means that as X increases, Y decreases or the either way around.

Comment on this hint

Notice that for table B, as X gets larger, Y is growing. Table B has a **positive** rate of change. Now check tables A and C.

B



Comment on this hint

As you can see from the image below only C has a **negative** rate of change (as x increases +2, y decreases -2). The correct answer is table C.

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

(+1 above each step; 0 below each step)

C

X	14	16	18	20	22	24
Y	22	20	18	16	14	12

(+2 above each step; −2 below each step)

Select C.

Comment on this hint

Select one:

- A
- B
- C

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25404

You are previewing content.

Which table shows a rate of change of zero?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	22	20	18	16	14	12

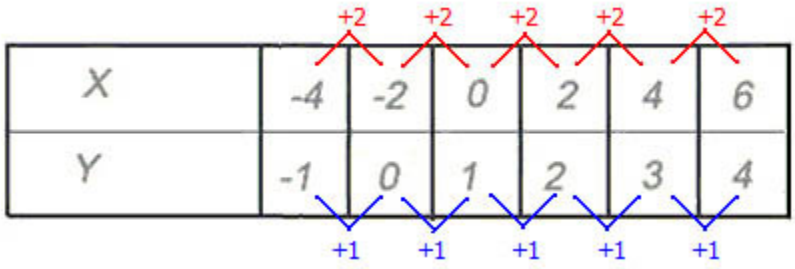
Comment on this question

A rate of change of zero means that regardless of what X is, Y remains the same.

Comment on this hint

Notice that for table B, as X gets larger, Y gets larger. Table B has a **positive** rate of change.
Now check tables A and C.

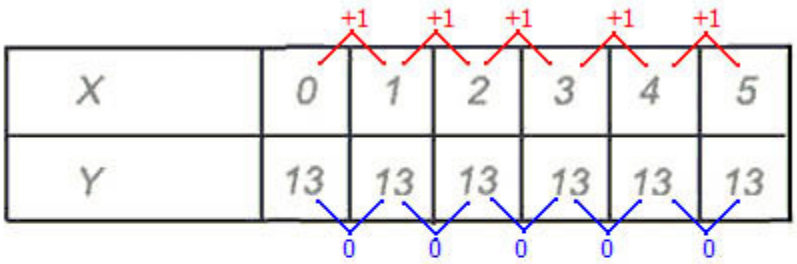
B



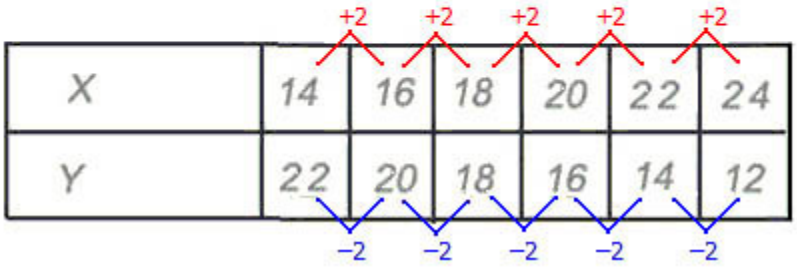
Comment on this hint

You can see from the image above, table A has a **rate of change of zero**. Choose answer choice A.

A



C



Comment on this hint

Select one:

- A
- B
- C

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25309

Assistment

You are previewing content.

Which table does **not** show a linear relationship?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	23	22	20	17	12	7

D

X	-1	2	5	7	10	13
Y	12	14	16	18	20	22

Comment on this question

Request Help

Select one:

- A
- B
- C
- D

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Which table does **not** show a linear relationship?

A

X	1	2	3	4	5	6
Y	14	16	18	20	22	24

B

X	-6	-4	-2	0	2	4
Y	9	9	9	9	9	9

C

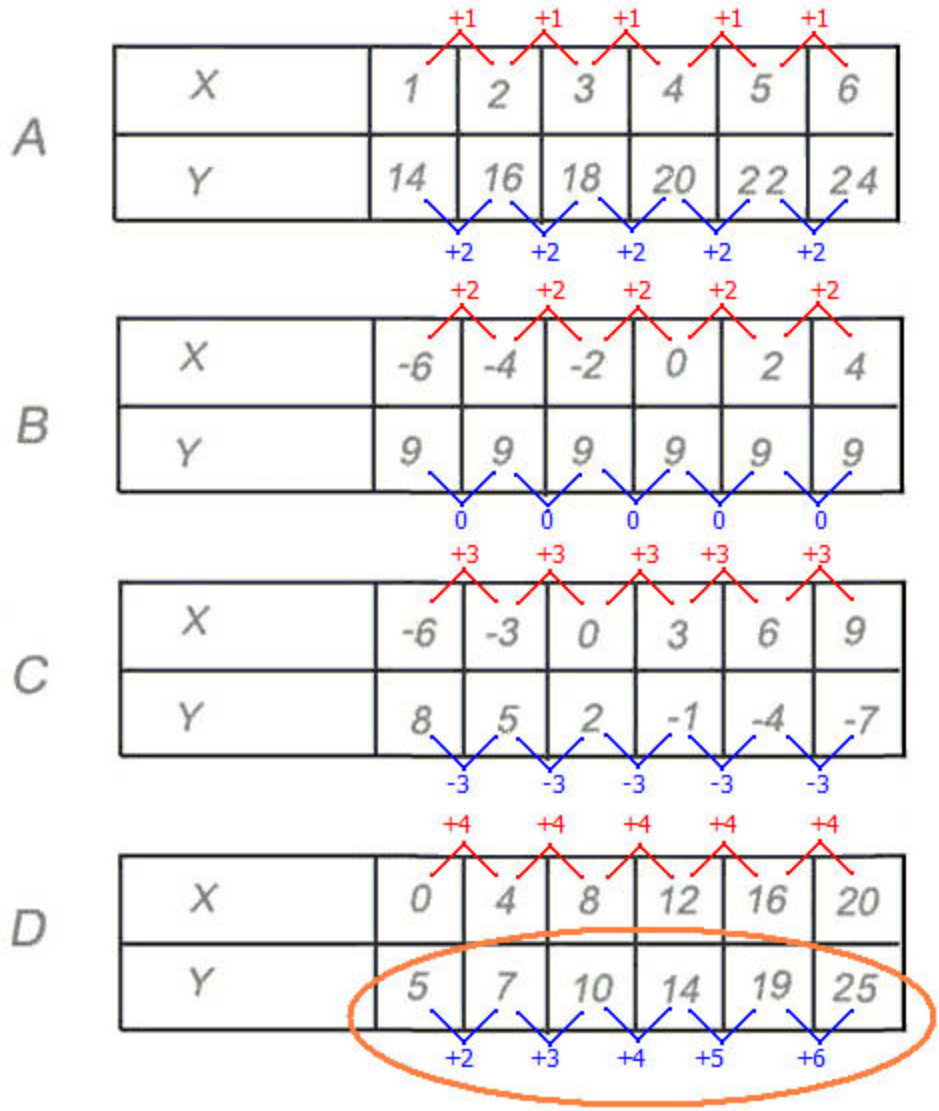
X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

D

X	0	4	8	12	16	20
Y	5	7	10	14	19	25

Solution:

(For your convenience, the difference between the values are displayed above and below)



The equation is linear if the y values will change evenly as the x values change at the same rate as well. So we are looking for the table where the x or y values that do **not** change evenly.

The x values from all the tables change in a constant way. Now look for y values that do **not** change at the same rate.

As you can see, the y values from table D do **not** change at constant rate. Therefore, Table D is not linear.

The answer is Table D.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which table does **not** show a linear relationship?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	23	22	20	17	12	7

D

X	-1	2	5	7	10	13
Y	12	14	16	18	20	22

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is Table C. Select C.

Comment on this hint

Select one:

- A
- B
- C
- D

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25764

Assistment

You are previewing content.

Which equation would produce the table of values shown below?

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

Comment on this question

Request Help

Select one:

- y = 4x + 18
- y = 2x + 16
- y = -2x + 16
- y = 2x + 14

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

What is the equation that would produce the table of values shown below?

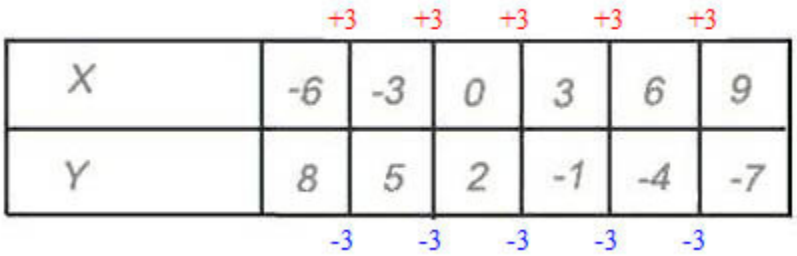
X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

Solution:

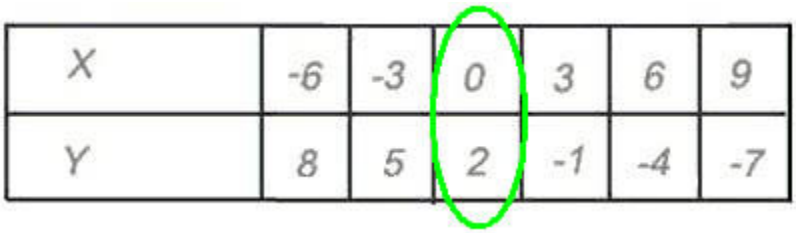
To find the equation, you need to find the slope and the y-intercept. Then you can place them into the y=mx+b form.

In order to find the slope or rate of change you just need to first check to see if the x's are changing evenly and then see what the constant rate of change is for y.

As we can see from the table, as x's changes evenly by +3, the constant rate of change for y is -3. This is the slope.



Next we need the y-intercept. It can be found by looking at the y coordinate when x is 0.



As we can see, when x = 0, y is equal to 2.

Now we have the slope m = 3 and the y-intercept b = 2. Therefore we can write the equation using the form y = mx +b.

The equation that fits this table and graph is y = 3x + 2.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which equation would produce the table of values shown below?

X	-4	-2	0	2	4	6
Y	20	18	16	14	12	10

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is y = -2x + 16. Select y = -2x + 16

Comment on this hint

Select one:

- y = 4x + 18
- y = 2x + 16
- y = -2x + 16
- y = 2x + 14

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25312

Assistment

You are previewing content.
Booker T. Washington Middle School is going to have healthy snacks delivered to the school. They are charged $5 for the delivery and then $1.5 for each snack.

Which equation calculates the cost **C** for **n** students?

Comment on this question

Request Help

Select one:

- C = 1.5 - 5n
- C = 1.5n + 5
- C = 5 + 1.5n
- C = 1.5n - 5

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

A car repair garage is charging a costumer $20 for the inspection and $35 for each replaced parts.

Which equation calculates the cost **C** for the costumer if the mechanic finds and replaces **n** parts?

Solution:

If n is the total number of parts replaced, then the total cost **without** inspection is 35 * n.

Now we just add the inspection fee to the cost for replacing n parts to get the final cost.

C = 20 + 35n

The final answer is C = 20 +35n

Comment on this question

Select one:

- I have read the example and now I am ready to try again

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Booker T. Washington Middle School is going to have healthy snacks delivered to the school. They are charged $5 for the delivery and then $1.5 for each snack.

Which equation calculates the cost **C** for **n** students?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The answer is C = 5 + 1.5n. Select C = 5 + 1.5n.

Comment on this hint

Select one:

- C = 1.5 - 5n
- C = 1.5n + 5
- C = 5 + 1.5n
- C = 1.5n - 5

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25325

Assistment

You are previewing content.

Which table shows a **positive** rate of change?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	22	20	18	16	14	12

Comment on this question

Request Help

Select one:

- A
- B
- C

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Which table shows a **positive** rate of change?

A

X	1	2	3	4	5	6
Y	14	16	18	20	22	24

B

X	-6	-4	-2	0	2	4
Y	9	9	9	9	9	9

C

X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

Solution:

(For your convenience, the difference between the values are displayed above and below)

A

X	1	2	3	4	5	6
	+1	+1	+1	+1	+1	
Y	14	16	18	20	22	24
	+2	+2	+2	+2	+2	

B

X	-6	-4	-2	0	2	4
	+2	+2	+2	+2	+2	
Y	9	9	9	9	9	9
	0	0	0	0	0	

C

X	-6	-3	0	3	6	9
	+3	+3	+3	+3	+3	
Y	8	5	2	-1	-4	-7
	-3	-3	-3	-3	-3	

A positive rate of change means that as X increases, Y increases.

Notice that for table C, as X gets larger, Y gets smaller. So table C has a **negative** rate of change.

As you can see from the image, above only A has a **positive** rate of change (as x increases +1, y increases also +2).

The answer is A.

Comment on this question

Select one:

- I have read the example and now I am ready to try again

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which table shows a **positive** rate of change?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	22	20	18	16	14	12

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is table B. Select B.

Comment on this hint

Select one:

- A
- B
- C

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25330

Assistment

You are previewing content.

Which table shows a **negative** rate of change?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	22	20	18	16	14	12

Comment on this question

Request Help

Select one:

- A
- B
- C

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Which table shows a **negative** rate of change?

A

X	1	2	3	4	5	6
Y	14	16	18	20	22	24

B

X	-6	-4	-2	0	2	4
Y	9	9	9	9	9	9

C

X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

Solution:

(For your convenience, the difference between the values are displayed above and below)

A

X	1	2	3	4	5	6
	+1	+1	+1	+1	+1	
Y	14	16	18	20	22	24
	+2	+2	+2	+2	+2	

B

X	-6	-4	-2	0	2	4
	+2	+2	+2	+2	+2	
Y	9	9	9	9	9	9
	0	0	0	0	0	

C

X	-6	-3	0	3	6	9
	+3	+3	+3	+3	+3	
Y	8	5	2	-1	-4	-7
	-3	-3	-3	-3	-3	

A negative rate of change means that as X increases, Y decreases.

Notice that for table A, as X gets larger, Y gets larger. Table A has a **positive** rate of change.

As you can see from the image above only C has a **negative** rate of change (as x increases +3, y decreases -3).

The answer is C.

Comment on this question

Select one:

- I have read the example and now I am ready to try again

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which table shows a **negative** rate of change?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	22	20	18	16	14	12

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is table C. Select C.

Comment on this hint

Select one:

- A
- B
- C

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25405

Assistment

You are previewing content.

Which table shows a rate of change of zero?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	22	20	18	16	14	12

Comment on this question

Request Help

Select one:

- A
- B
- C

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Which table shows a rate of change of zero?

A

X	1	2	3	4	5	6
Y	14	16	18	20	22	24

B

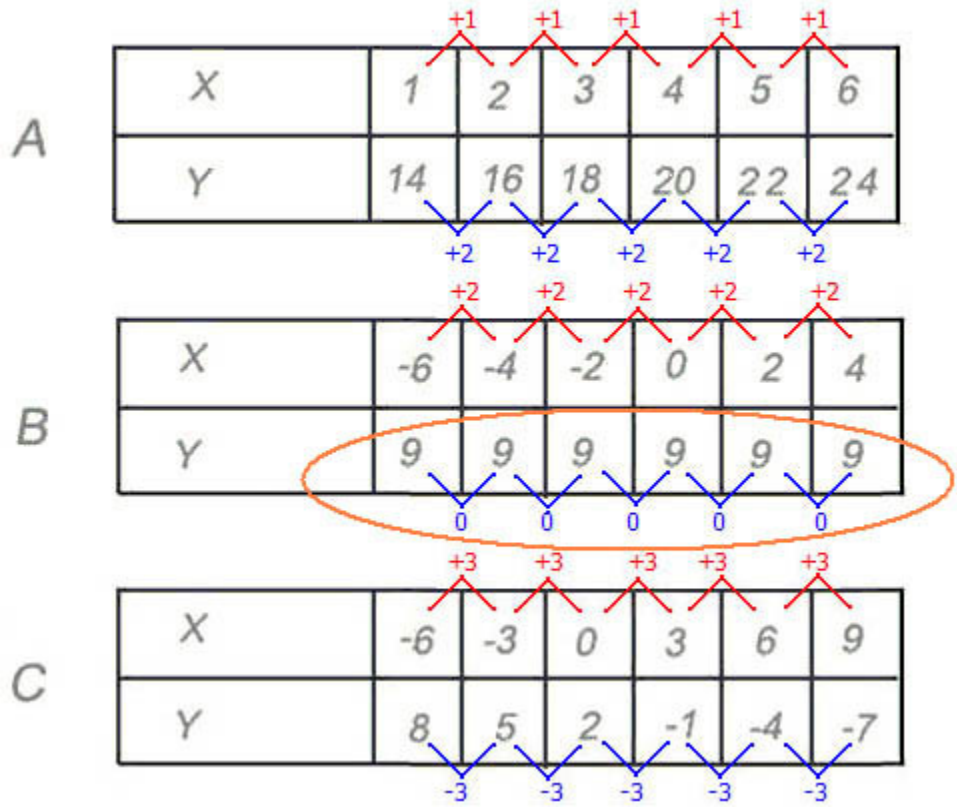
X	-6	-4	-2	0	2	4
Y	9	9	9	9	9	9

C

X	-6	-3	0	3	6	9
Y	8	5	2	-1	-4	-7

Solution:

(For your convenience, the difference between the values are displayed above and below)



A rate of change of zero means that regardless of what X is, Y remains the same.

Notice that for table A, as X gets larger, Y gets larger. Table A has a **positive** rate of change.

You can see from the image above, table B has a **rate of change of zero**, because the y values remain constant.

The answer is B.

Comment on this question

Select one:

- I have read the example and now I am ready to try again

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which table shows a rate of change of zero?

A

X	0	1	2	3	4	5
Y	13	13	13	13	13	13

B

X	-4	-2	0	2	4	6
Y	-1	0	1	2	3	4

C

X	14	16	18	20	22	24
Y	22	20	18	16	14	12

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is Table A. Select A.

Comment on this hint

Select one:

- A
- B
- C

Submit Answer

Correct!

You are done with this problem!

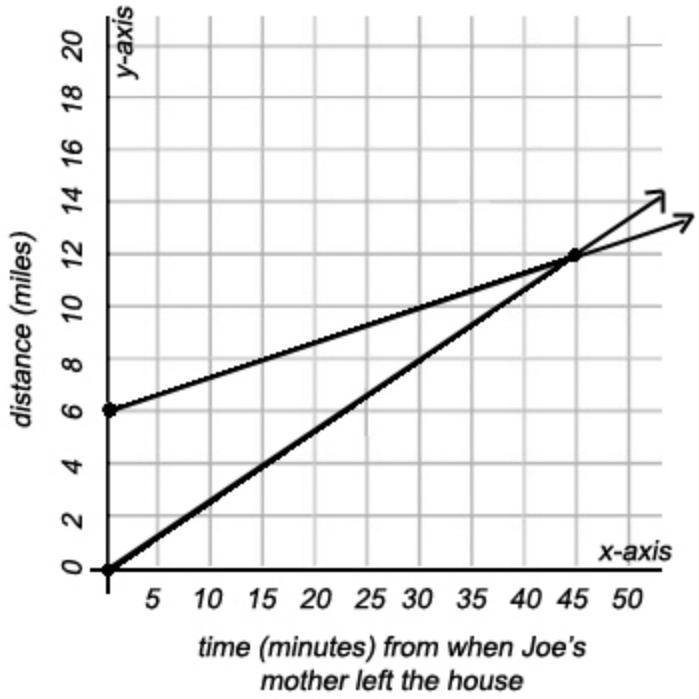
Comment on this problem

Assistment #13091

Assistment

You are previewing content.
Joe went for a bike ride but he forgot his lunch. He was 6 miles away when his mother noticed. His mother got on her bike and rode after him. The graph shows the distance Joe and his mother have traveled starting from the time she left the house.

After how many **minutes** does Joe's mother catch up to him?

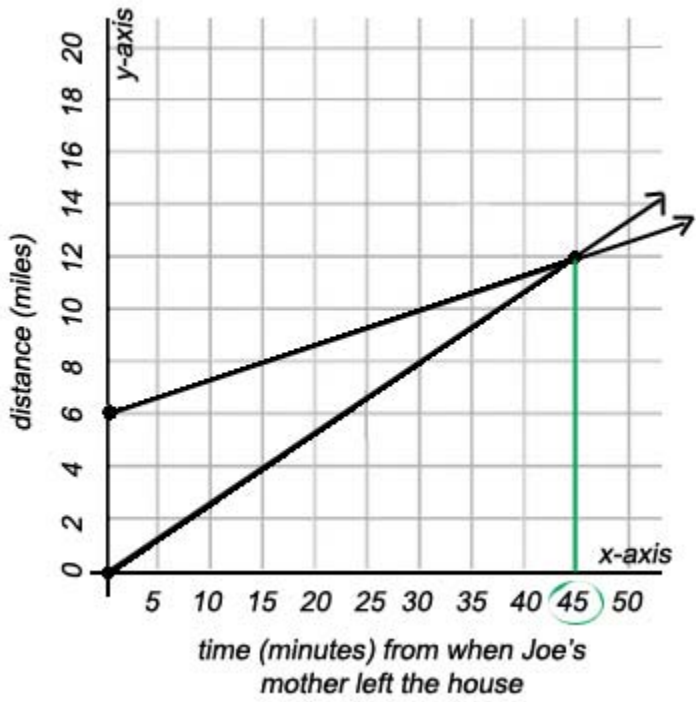


Comment on this question

Joe's mother catches up to him when the two lines (representing their distance and time) intersect.

Comment on this hint

The time at the point the two lines intersect is given by the x-coordinate value.



Comment on this hint

Joe's mother catches up to him after 45 minutes. Type in 45.

Comment on this hint

Type your answer below:

- 45

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13095

Assistment

You are previewing content.
Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company A** charge per snack?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

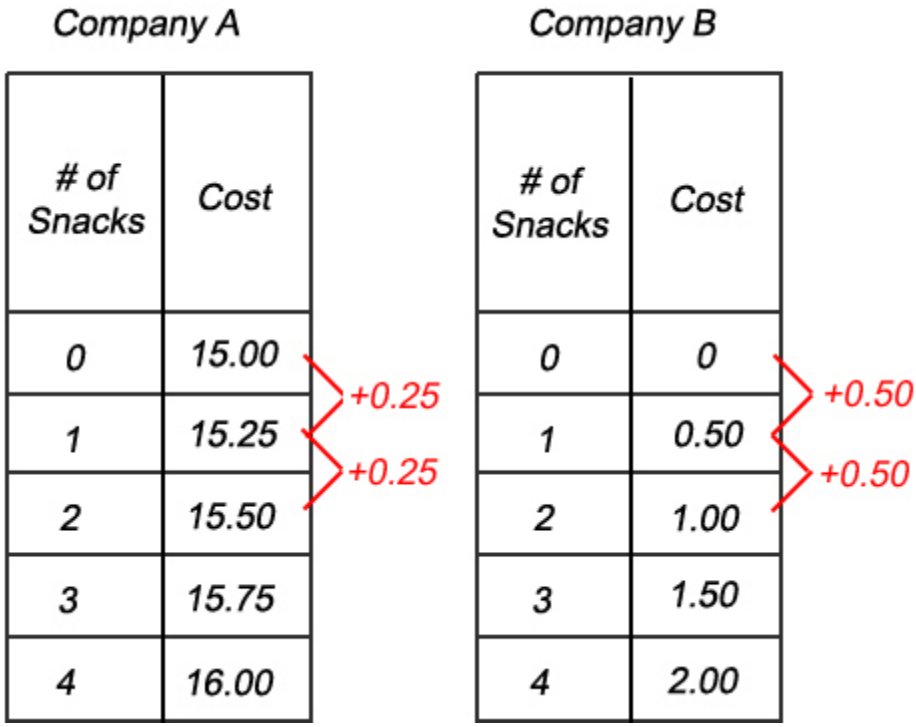
# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Comment on this question

To find how many dollars company A charges for each snack, find the difference between the cost of 1 snack and the cost of 2 snacks.

Comment on this hint

Take a look at this image.



Comment on this hint

Company A charge 0.25 per snack. Type in 0.25

Comment on this hint

Type your answer below (mathematical expression):

- 0.25

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13096

Assistment

You are previewing content.
Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company B** charge per snack?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

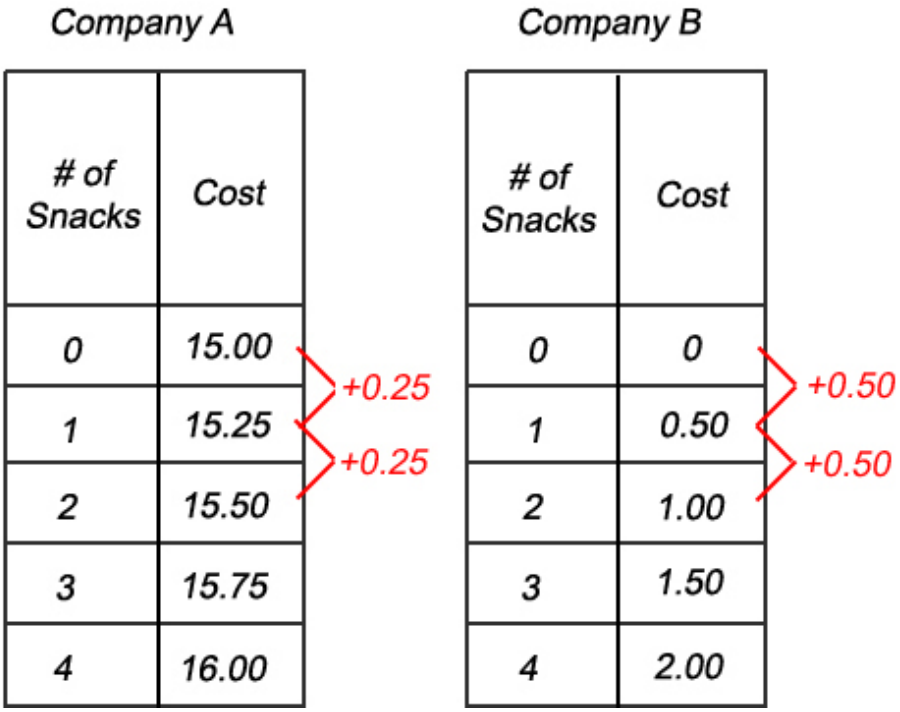
# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Comment on this question

To find how many dollars company B charges for each snack, find the difference between the cost of 1 snack and the cost of 2 snacks.

Comment on this hint

Take a look at this image.



Comment on this hint

Company B charges 0.50 per snack. Type in 0.50

Comment on this hint

Type your answer below (mathematical expression):

- .50

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #13101

Assistment

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the savings **S** she has after **w** weeks:
S = 5w + 30

If we plot this equation on a graph where her savings is represented by the y-axis, what is the y-intercept of this equation?

Comment on this question

The equation is in y=mx+b form. b represents the y-intercept.

Comment on this hint

The equation is S = 5w + 30. That means that the y-intercept is 30. Type in 30.

Comment on this hint

Type your answer below (mathematical expression):

- 30

Submit Answer

Correct!
You are done with this problem!

Comment on this problem

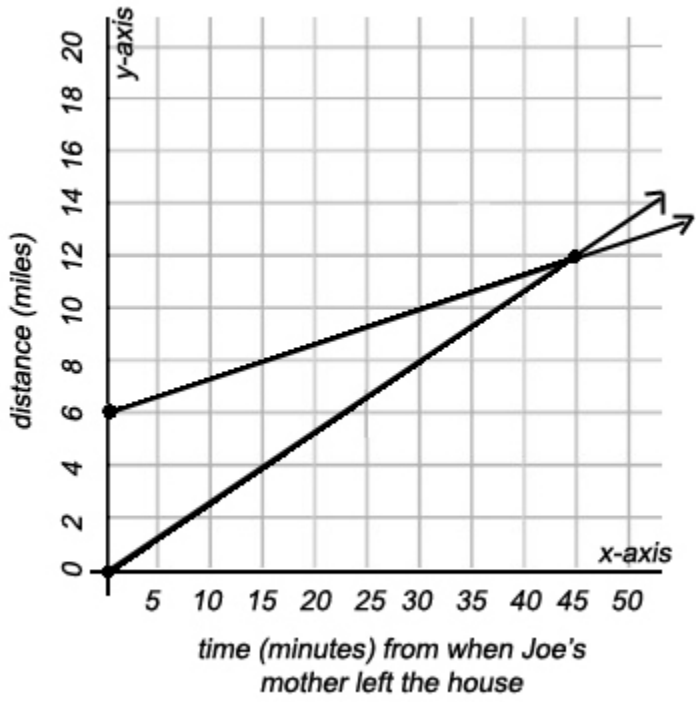
Assistment #25490

Assistment

You are previewing content.

Joe went for a bike ride but he forgot his lunch. He was 6 miles away when his mother noticed. His mother got on her bike and rode after him. The graph shows the distance Joe and his mother have traveled starting from the time she left the house.

How many **miles** from home does Joe's mother catch up to him?



Comment on this question

Request Help

Type your answer below (mathematical expression):

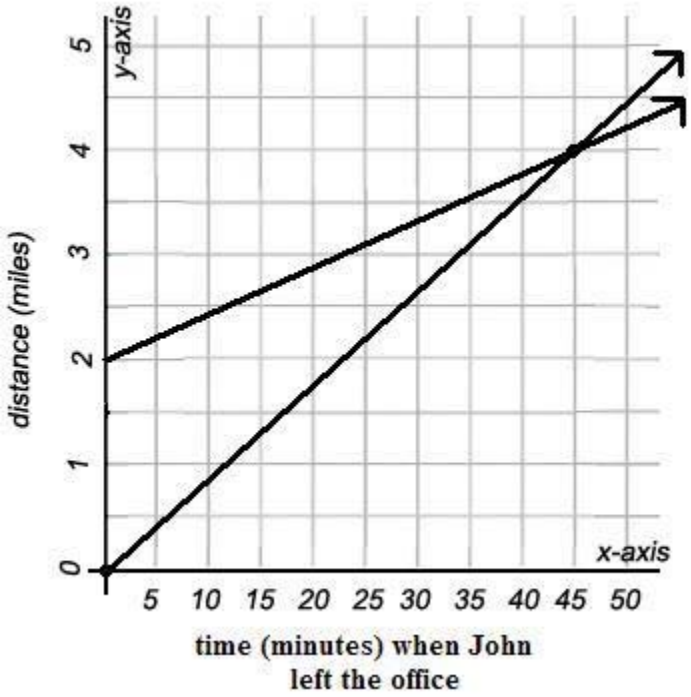
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

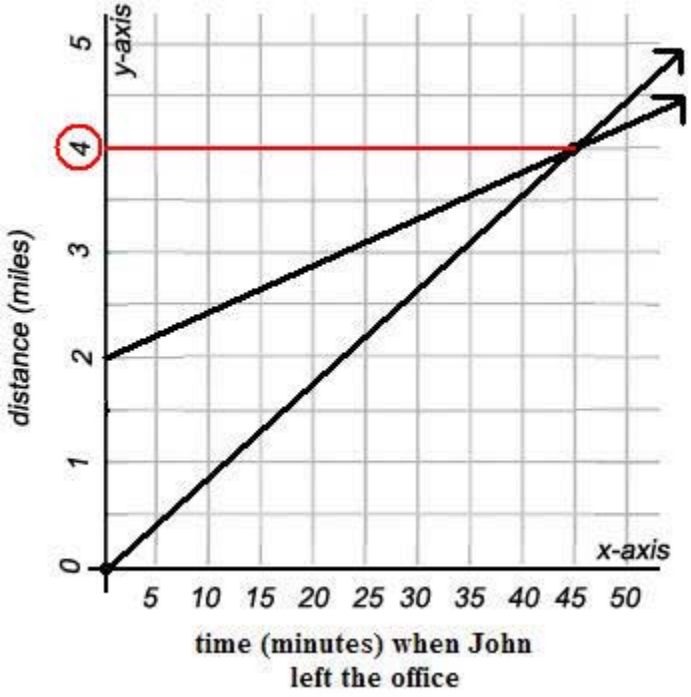
Dan left the office to jog in the nearby park. His co-worker, John, realized that Dan left his cell phone behind. After Dan had jogged 2 miles, his co-worker ran after him to give his phone back. The graph shows the distance John and Dan have traveled starting from the time John left the office.

How many **miles** from work does John catch up to Dan?



Solution:

John catches up to Dan when they have both traveled the **same distance**.



As you can see from the graph, they have traveled the same distance at 4 miles. That is the point where the

two graphs intersect.

John catches up to his co-worker after 4 miles.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

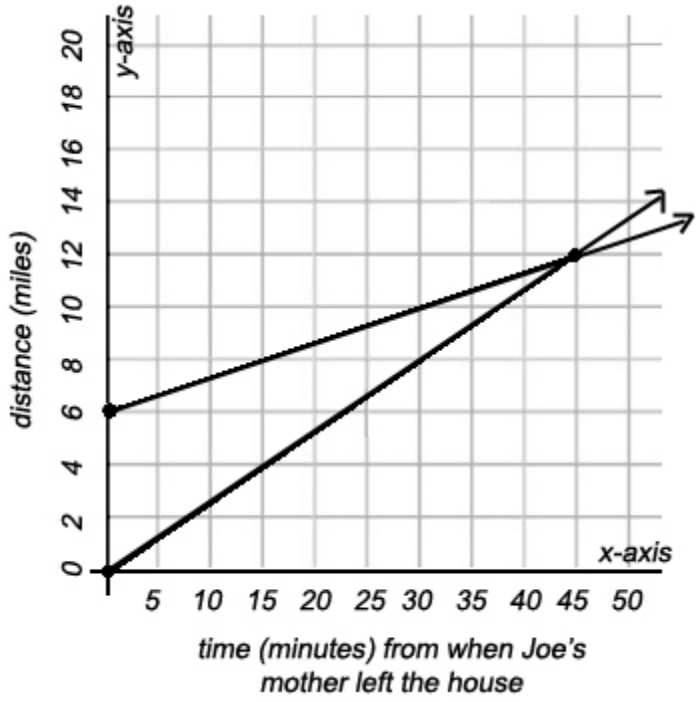
Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Joe went for a bike ride but he forgot his lunch. He was 6 miles away when his mother noticed. His mother got on her bike and rode after him. The graph shows the distance Joe and his mother have traveled starting from the time she left the house.

How many **miles** from home does Joe's mother catch up to him?



Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 12 miles. Type in 12.

Comment on this hint

Type your answer below (mathematical expression):

- 12

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

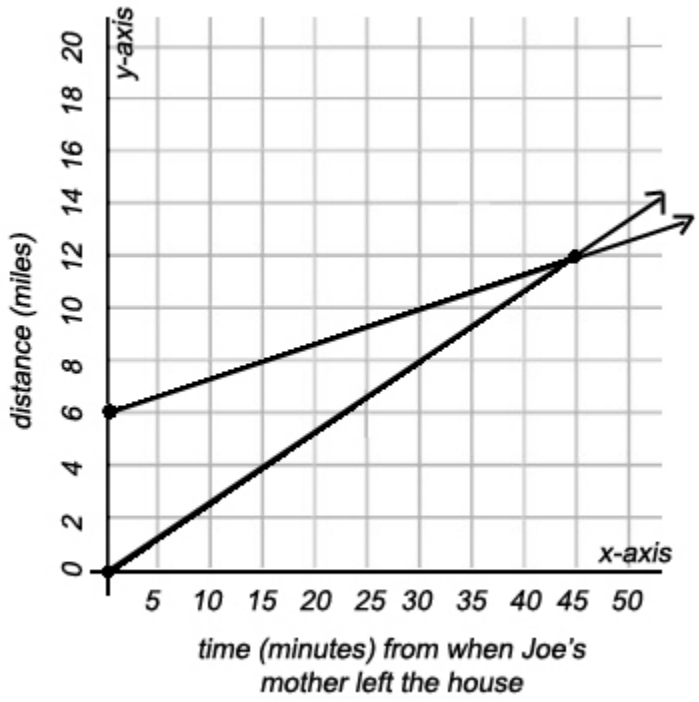
Assistment

Assistment #25506

You are previewing content.

Joe went for a bike ride but he forgot his lunch. He was 6 miles away when his mother noticed. His mother got on her bike and rode after him. The graph shows the distance Joe and his mother have traveled starting from the time she left the house.

After how many **minutes** does Joe's mother catch up to him?



Comment on this question

Request Help

Type your answer below (mathematical expression):

-

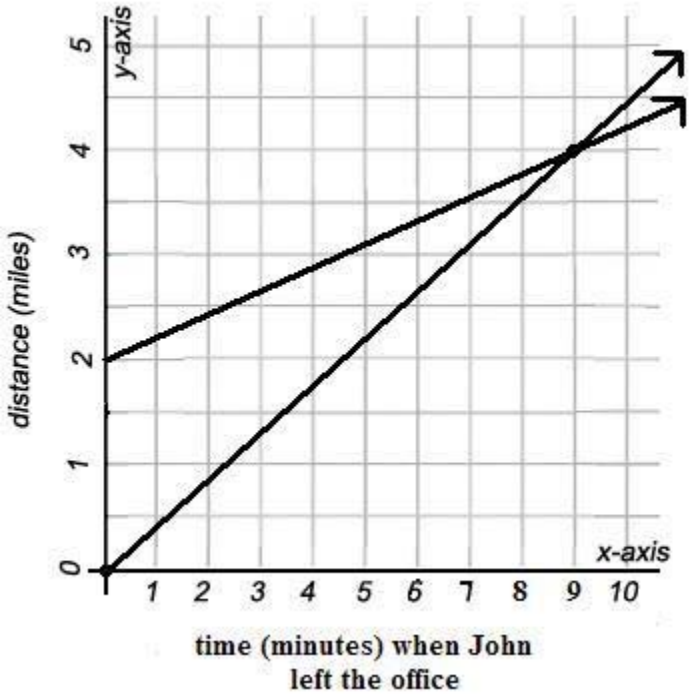
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Dan left the office to jog in the nearby park. His co-worker, John, realized that Dan left his cell phone behind. After Dan had jogged 2 miles, his co-worker ran after him to give his phone back. The graph shows the distance John and Dan have traveled starting from the time John left the office.

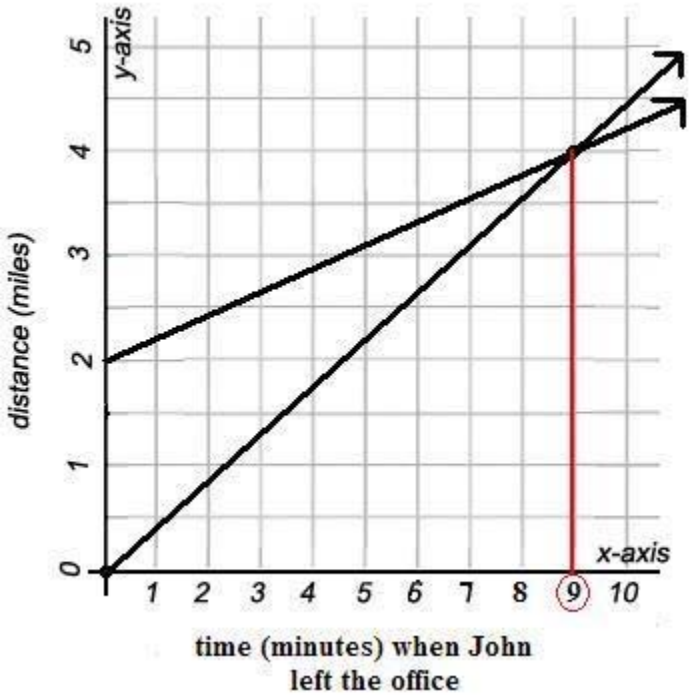
After how many **minutes** does John catch up to Dan?



Solution:

John catches up to Dan when the two lines (representing their distance and time) intersect.

The time at the point the two lines intersect is given by the x-coordinate value.



John catches up to Dan after 9 minutes.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

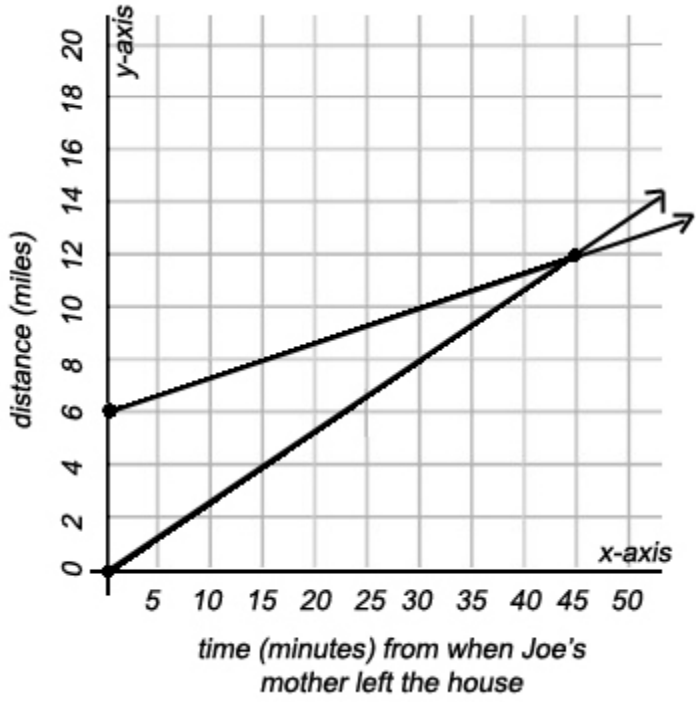
Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Joe went for a bike ride but he forgot his lunch. He was 6 miles away when his mother noticed. His mother got on her bike and rode after him. The graph shows the distance Joe and his mother have traveled starting from the time she left the house.

After how many **minutes** does Joe's mother catch up to him?



Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

Joe's mother catches up to him after 45 minutes. Type in 45.

Comment on this hint

Type your answer below (mathematical expression):

- 45

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25532

You are previewing content.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company A** charge per snack?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Two car garages offer car repairs at different prices. The tables below show the cost for each garage.

How many dollars does **Car garage A** charge per repair?

Car garage A

# of Repairs	Cost
0	50.00
1	55.00
2	60.00
3	65.00
4	70.00

Car garage B

# of Repairs	Cost
0	1.00
1	8.50
2	16.00
3	23.50
4	31.00

Solution:

To find how many dollars car garage A charges for each repair, we must find the difference between the cost of 1 repair and the cost of 2 repairs.

Take a look at this image:

Car garage A

# of Repairs	Cost
0	50.00
1	55.00
2	60.00
3	65.00
4	70.00

Car garage A charges 5.00 per repair.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company A** charge per snack?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

Company A charge 0.25 per snack. Type in 0.25

Comment on this hint

Type your answer below (mathematical expression):

- 0.25

Submit Answer

Correct!
You are done with this problem!
Comment on this problem

Assistment #25543

Assistment

You are previewing content.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company B** charge per snack?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Comment on this question

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Two car garages offer car repairs at different prices. The tables below show the cost for each garage.

How many dollars does **Car garage B** charge per repair?

Car garage A

# of Repairs	Cost
0	50.00
1	55.00
2	60.00
3	65.00
4	70.00

Car garage B

# of Repairs	Cost
0	1.00
1	8.50
2	16.00
3	23.50
4	31.00

Solution:

To find how many dollars car garage B charges for each repair, we must find the difference between the cost of 1 repair and the cost of 2 repairs.

Take a look at this image:

Car garage B

# of Repairs	Cost
0	1.00
1	8.50
2	16.00
3	23.50
4	31.00

7.50

7.50

Car garage B charges 7.50 per repair.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company B** charge per snack?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

Company B charges 0.50 per snack. Type in 0.50

Comment on this hint

Type your answer below (mathematical expression):

- 0.50

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25546

You are previewing content.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 30 + 5w

How many **dollars is she saving each week**?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Sam is saving money to buy a book. His parents gave him some money to start him savings. He will also be saving half his allowance each week. This equation shows the **S** dollars he has after **w** weeks:
S = 15 + 2w

How many **dollars is he saving each week**?

Solution:

To find how much he is saving each week, find the difference between how much he has saved after 0 weeks and after 1 week.

After 0 weeks, he has saved:

$S = 15 + 2w$

$S_0 = 15 + 2 * 0$

$S_0 = 15$

After 1 weeks, he has saved:

$S = 15 + 2\ w$
$S_1 = 15 + 2 * 1$

$S_1 = 15 + 2$
$S_1 = 17$

Here is a table showing what we now know.

Week	Savings
0	15
1	17

The difference between his savings after 0 and 1 weeks is 17 - 15 = 2. Thus, he saves **2** dollars each week.

Notice that **2** is the coefficient of **w**, and can be read from the equation as long as it is in the form y=mx+b.

Comment on this question
Select one:

- I have read the example and now I am ready to try again.

Submit Answer
Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 30 + 5w

How many **dollars is she saving each week**?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question
The correct answer is 5 dollars. Type in 5.
Comment on this hint
Type your answer below (mathematical expression):

- 5

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

Assistment #25549

Assistment

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 30 + 5w

How many **dollars did her grandparents give her**?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Sam is saving money to buy a book. His parents gave him some money to start his savings. He will also be saving half his allowance each week. This equation shows the **S** dollars he has after **w** weeks:
S = 15 + 2w

How many **dollars did his parents give him**?

Solution:

The amount his parents gave him is what he has in the beginning after 0 weeks.

After 0 weeks, he has saved:

$S = 15 + 2w$

$S_0 = 15 + 2 * 0$

$S_0 = 15$

The amount of money that his parents gave Sam to **start** saving was 15 dollars.

You could also have found the answer by looking at the constant term in the equation written in y=mx+**b** form.

The correct answer is 15.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 30 + 5w

How many **dollars did her grandparents give her**?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 30 dollars. Type in 30

Comment on this hint

Type your answer below (mathematical expression):

- 30

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25628

Assistment

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the savings **S** she has after **w** weeks:
S = 5w + 30

If we plot this equation on a graph where her savings is represented by the y-axis, what is the y-intercept of this equation?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Sam is saving money to buy a book. His parents gave him some money to start his savings. He will also be saving half his allowance each week. This equation shows the **S** dollars he has after **w** weeks:
S = 15 + 2w

If we plot this equation on a graph where his savings is represented by the y-axis, what is the y-intercept of this equation?

Solution:

The equation is in y=mx+**b** form. **b** represents the y-intercept.

The equation is S = 2w + 15. That means that the y-intercept is **15**.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the savings **S** she has after **w** weeks:
S = 5w + 30

If we plot this equation on a graph where her savings is represented by the y-axis, what is the y-intercept of this equation?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question
The correct answer is 30. Type in 30
Comment on this hint
Type your answer below (mathematical expression):

- 30

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25632

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the savings **S** she has after **w** weeks:
S = 30 + 5w

What is the coefficient of the **w** in the equation?

Comment on this question

Request Help

Type your answer below (mathematical expression):

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Sam is saving money to buy a book. His parents gave him some money to start his savings. He will also be saving half his allowance each week. This equation shows the **S** dollars he has after **w** weeks:
S = 15 + 2w

If we plot this equation on a graph where his savings is represented by the y-axis, what is the y-intercept of this equation?

Solution:

The coefficient is the value that w is multiplied by.

You can look at the equation and the coefficient of x is the number multiplied by x.
S = 15 + 2w

So the coeficient of w is 2.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the savings S she has after w weeks:
S = 30 + 5w

What is the coefficient of the w in the equation?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question
The correct answer is 5. Type in 5
Comment on this hint
Type your answer below (mathematical expression):

- 5

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

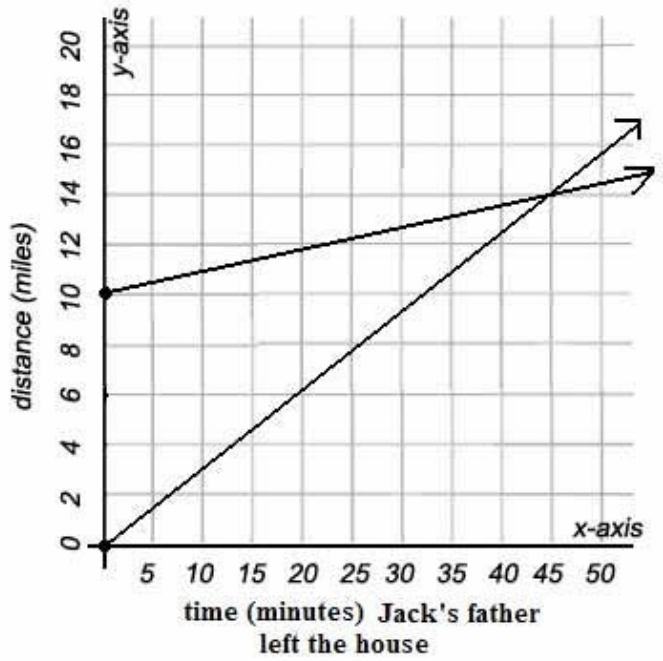
Assistment

Assistment #25492

You are previewing content.

Jack went yo school on his bike but he forgot his homework. He was 10 miles away when his father noticed. His father got on his bike and rode after him. The graph shows the distance Jack and his father have traveled starting from the time he left the house.

How many **miles** from home does Jack's father catch up to him?

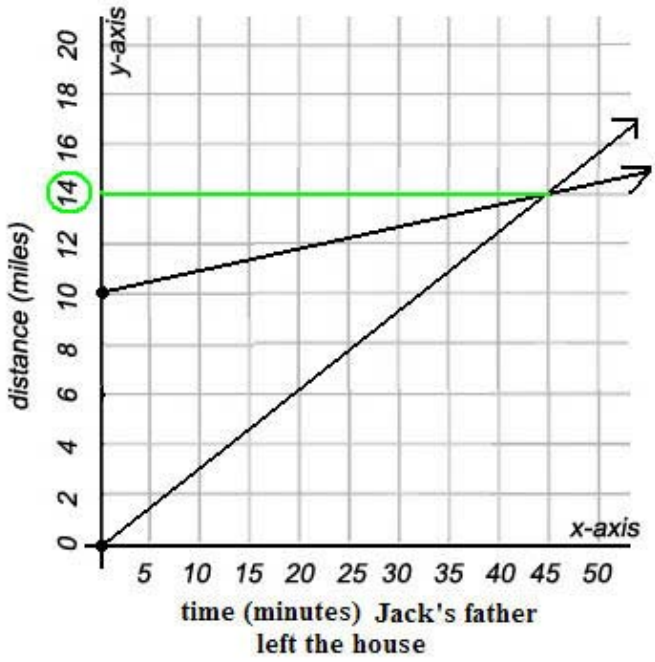


Comment on this question

Jack's father catches up to him when they have both traveled the **same distance**.

Comment on this hint

They have traveled the same distance at 14 miles. That is the point where the two graphs intersect.



Comment on this hint

Jack's father catches up to him after 14 miles. Type in 14.

Comment on this hint

Type your answer below (mathematical expression):

- 14

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

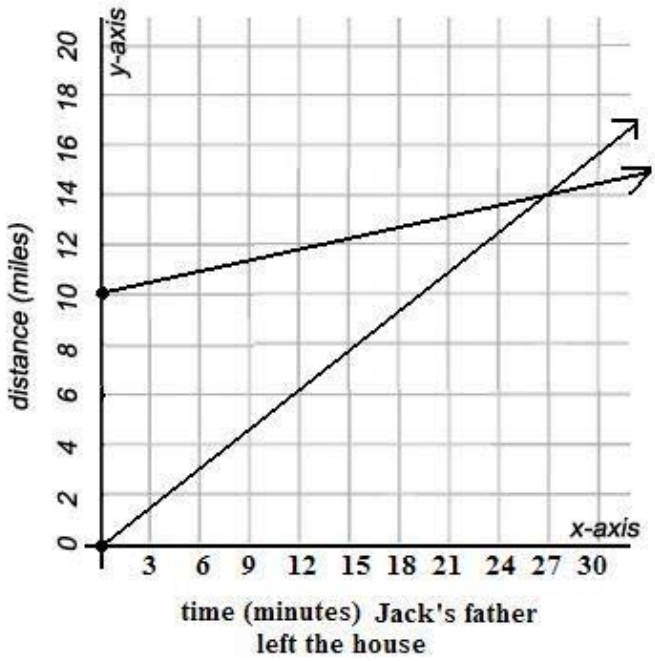
Assistment #25507

Assistment

You are previewing content.

Jack went yo school on his bike but he forgot his homework. He was 10 miles away when his father noticed. His father got on his bike and rode after him. The graph shows the distance Jack and his father have traveled starting from the time he left the house.

After how many **minutes** does Jack's father catch up to him?



Comment on this question

Jack's father catches up to him when the two lines (representing their distance and time) intersect.

Comment on this hint

The time at the point the two lines intersect is given by the x-coordinate value.

Comment on this hint

Jack's father catches up to him after 27 minutes. Type in 27.

Comment on this hint

Type your answer below (mathematical expression):

- 27

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

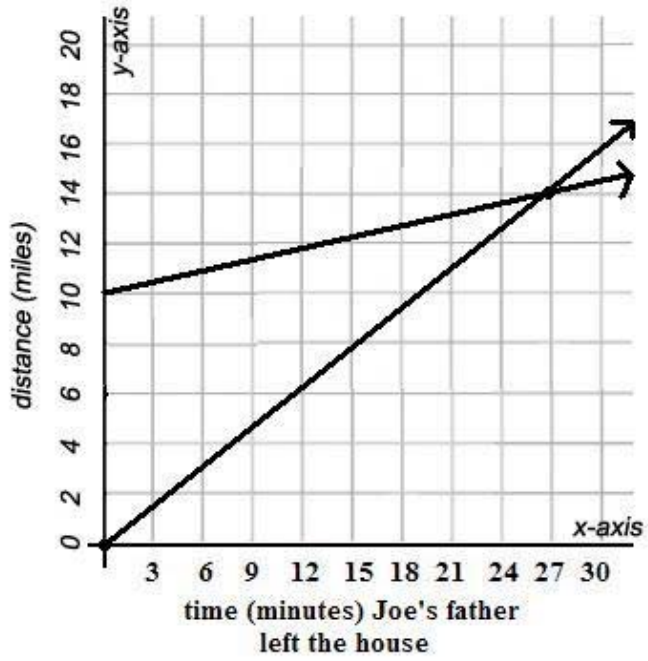
Assistment #25513

Assistment

You are previewing content.

Jack went to school on his bike but he forgot his homework. He was 10 miles away when his father noticed. His father got on his bike and rode after him. The graph shows the distance Jack and his father have traveled starting from the time he left the house.

If Jack's father keeps riding at the same speed, how far will he have gone **after a total of half of hour** from when he left home?



Comment on this question

Remember, one half of hour is 30 minutes.

Comment on this hint

If we follow Jack's father's line, where will it be after one half of hour?

Comment on this hint

Take a look at this line extended.

Comment on this hint

Find the point where his father has biked for 1/2 hour or 30 minutes.

Comment on this hint

If he rides at the same pace for 1/2 hour or 30 minutes he will have ridden 16 miles. Type in 16.

Comment on this hint

Type your answer below (mathematical expression):

- 16

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25540

Assistment

You are previewing content.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company A** charge per snack?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	7.00

Company B

# of Snacks	Cost
0	16.00
1	17.50
2	19.00
3	20.50
4	22.00

Comment on this question

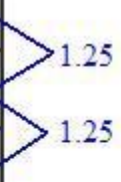
To find how many dollars company A charges for each snack, find the difference between the cost of 1 snack and the cost of 2 snacks.

Comment on this hint

Take a look at this image.

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	7.00



Comment on this hint

Company A charges 1.25 per snack. Type in 1.25

Comment on this hint

Type your answer below (mathematical expression):

- 1.25

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25544

Assistment

You are previewing content.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company B** charge per snack?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	8.00

Company B

# of Snacks	Cost
0	16.00
1	17.50
2	19.00
3	20.50
4	22.00

Comment on this question

To find how many dollars company B charges for each snack, find the difference between the cost of 1 snack and the cost of 2 snacks.

Comment on this hint

Take a look at this image.

Company B

# of Snacks	Cost
0	16.00
1	17.50
2	19.00
3	20.50
4	22.00

Comment on this hint

Company B charges 1.50 per snack. Type in 1.50

Comment on this hint

Type your answer below (mathematical expression):

- 1.50

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25547

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

How many **dollars is she saving each week**?

Comment on this question

To find how much she is saving each week, find the difference between how much she has saved after 0 weeks and after 1 week.

Comment on this hint

After 0 weeks, she has saved:
S = 40 + 7 w
S_0 = 40 + 7 * 0
S_0 = 40 + 0
S_0 = 40

After 1 week, she has saved:
S = 40 + 7 w
S_1 = 40 + 7 * 1
S_1 = 40 + 7
S_1 = 47

Here is a table showing what we now know.

Week	Savings
0	40
1	47

Comment on this hint

The difference between her savings after 0 and 1 weeks is 47 - 40 = 7. Notice that 7 is the coefficient of **w in the eq**, and can be read from the equation as long as it is in the form y=mx+b.
Type in 7.

Comment on this hint

Type your answer below (mathematical expression):

- 7

Submit Answer
Correct!
You are done with this problem!

Comment on this problem

Assistment

Assistment #25626

You are previewing content.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

How many **dollars did her grandparents give her**?

Comment on this question

The amount her grandparents gave her is what she has in the beginning after 0 weeks.

Comment on this hint

After 0 weeks, she has saved:
S = 40 + 7 w
S_0 = 40 + 7 * 0
S_0 = 40 + 0
S_0 = 40

The amount of money that her grandparents gave Ming to **start** saving was 40 dollars.

Comment on this hint

You could also have found the answer by looking at the constant term in the equation written in y=mx+**b** form. The correct answer is 40. Type in 40.

Comment on this hint

Type your answer below (mathematical expression):

- 40

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25630

You are previewing content.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

If we plot this equation on a graph where her savings is represented by the y-axis, what is the y-intercept of this equation?

Comment on this question

The equation is in y=mx+b form. b represents the y-intercept.

Comment on this hint

The equation is S = 7w + 40. That means that the y-intercept is 40. Type in 40.

Comment on this hint

Type your answer below (mathematical expression):

- 40

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25633

Assistment

You are previewing content.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

What is the coefficient of the **w** in the equation?

Comment on this question

The coefficient is the value that w is multiplied by.

Comment on this hint

You can look at the equation and the coefficient of x is the number multiplied by x.
S = 40 + 7w

Comment on this hint

So the coeficient of w is 7. Type in 7

Comment on this hint

Type your answer below (mathematical expression):

- 7

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

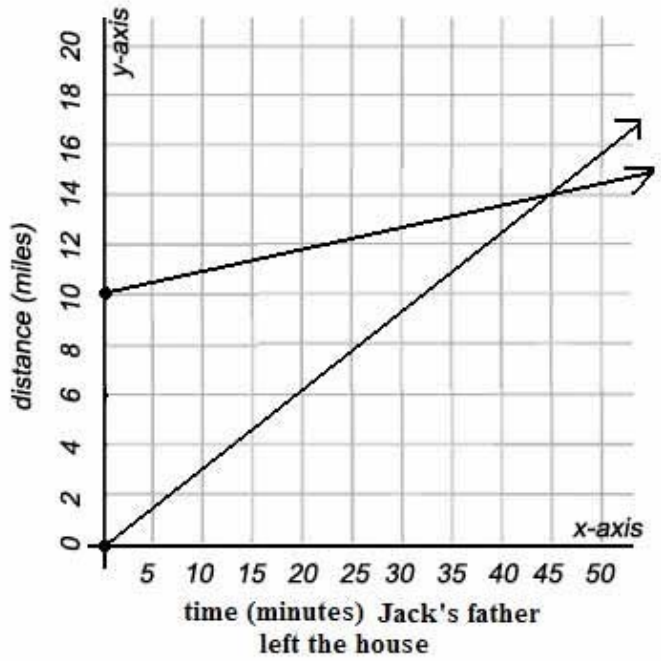
Assistment

Assistment #25496

You are previewing content.

Jack went yo school on his bike but he forgot his homework. He was 10 miles away when his father noticed. His father got on his bike and rode after him. The graph shows the distance Jack and his father have traveled starting from the time he left the house.

How many **miles** from home does Jack's father catch up to him?



Comment on this question

Request Help

Type your answer below (mathematical expression):

-

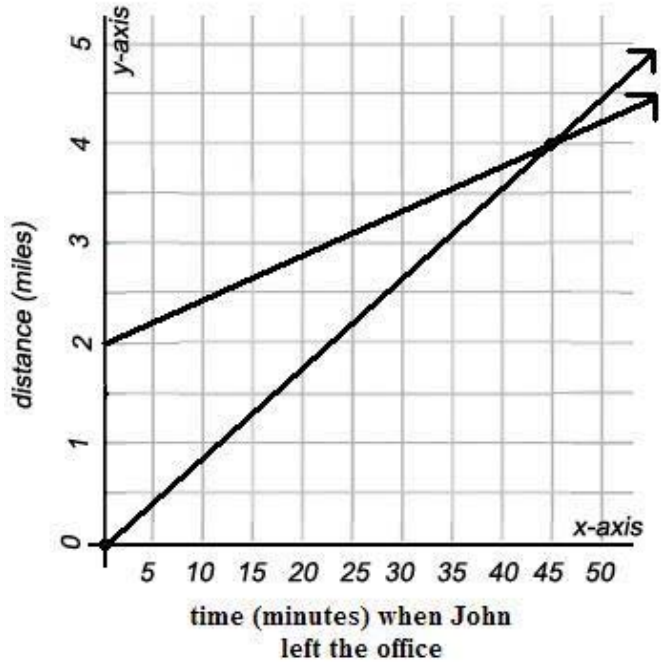
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Dan left the office to jog in the nearby park. His co-worker, John, realized that Dan left his cell phone behind. After Dan had jogged 2 miles, his co-worker ran after him to give his phone back. The graph shows the distance John and Dan have traveled starting from the time John left the office.

How many **miles** from work does John catch up to Dan?



Solution:

John catches up to Dan when they have both traveled the **same distance**.

As you can see from the graph, they have traveled the same distance at 4 miles. That is the point where the two graphs intersect.

John catches up to his co-worker after 4 miles.

Comment on this question

Select one:

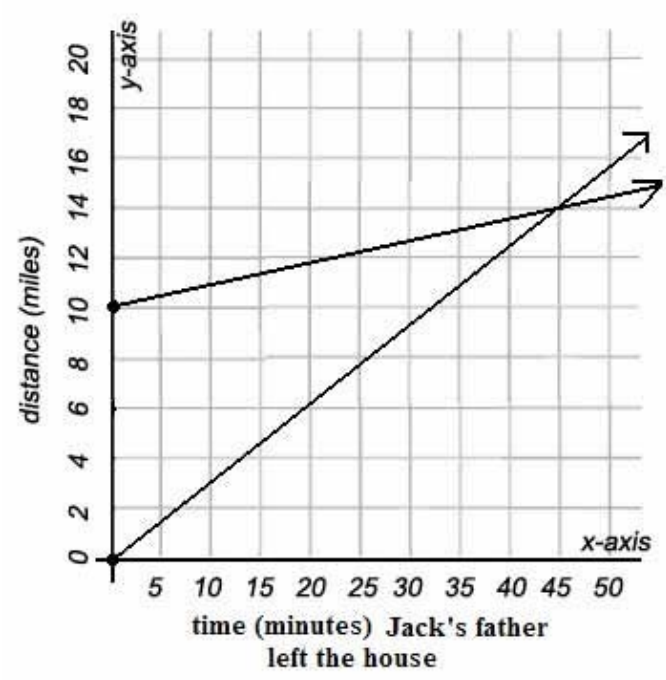
- I have read the example and now I am ready to try again.

Submit Answer
Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Jack went yo school on his bike but he forgot his homework. He was 10 miles away when his father noticed. His father got on his bike and rode after him. The graph shows the distance Jack and his father have traveled starting from the time he left the house.

How many **miles** from home does Jack's father catch up to him?



Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question
The correct answer is 14 miles. Type in 14.
Comment on this hint
Type your answer below (mathematical expression):

- 14

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

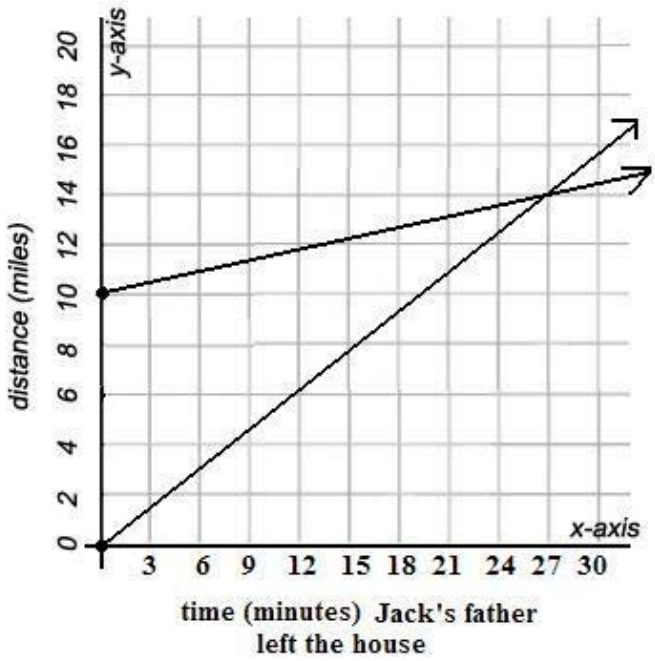
Assistment

Assistment #25510

You are previewing content.

Jack went yo school on his bike but he forgot his homework. He was 10 miles away when his father noticed. His father got on his bike and rode after him. The graph shows the distance Jack and his father have traveled starting from the time he left the house.

After how many **minutes** does Jack's father catch up to him?



Comment on this question

Request Help

Type your answer below (mathematical expression):

-

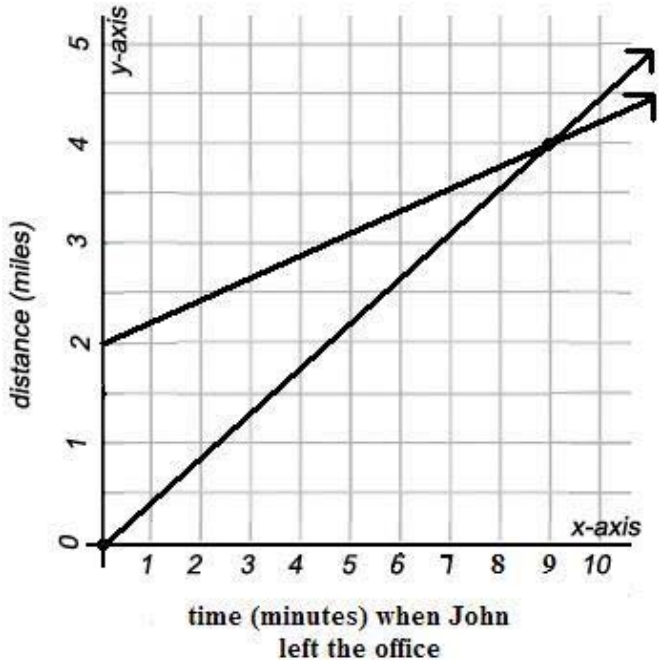
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Dan left the office to jog in the nearby park. His co-worker, John, realized that Dan left his cell phone behind. After Dan had jogged 2 miles, his co-worker ran after him to give his phone back. The graph shows the distance John and Dan have traveled starting from the time John left the office.

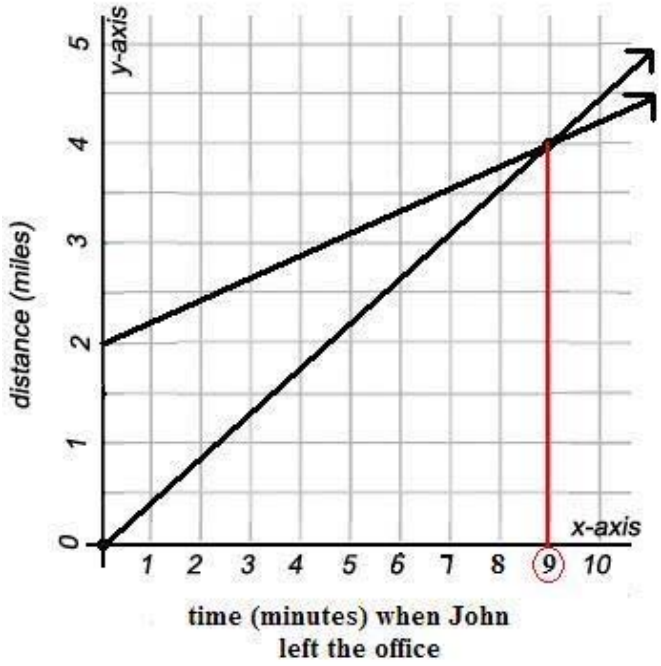
After how many **minutes** does John catch up to Dan?



Solution:

John catches up to Dan when the two lines (representing their distance and time) intersect.

The time at the point the two lines intersect is given by the x-coordinate value.



John catches up to Dan after 9 minutes.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

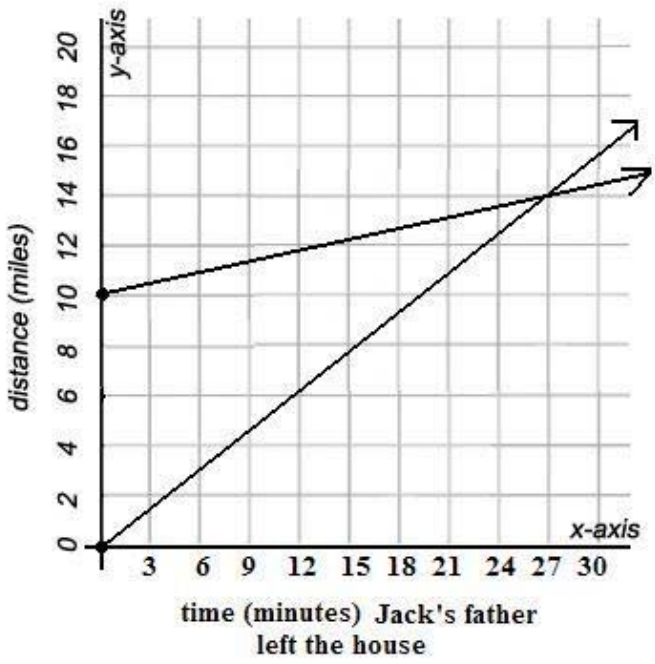
Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Jack went yo school on his bike but he forgot his homework. He was 10 miles away when his father noticed. His father got on his bike and rode after him. The graph shows the distance Jack and his father have traveled starting from the time he left the house.

After how many **minutes** does Jack's father catch up to him?



Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

Jack's father catches up to him after 27 minutes. Type in 27.

Comment on this hint

Type your answer below (mathematical expression):

- 27

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

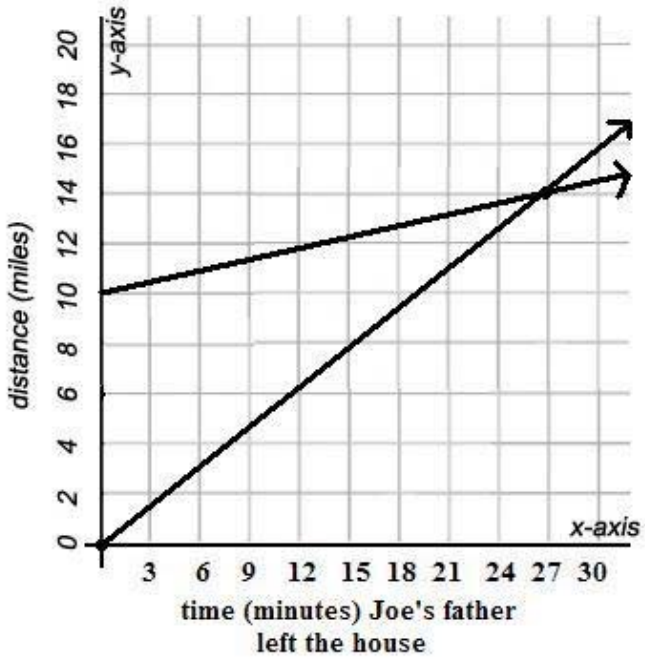
Assistment

Assistment #25531

You are previewing content.

Jack went to school on his bike but he forgot his homework. He was 10 miles away when his father noticed. His father got on his bike and rode after him. The graph shows the distance Jack and his father have traveled starting from the time he left the house.

If Jack's father keeps riding at the same speed, how far will he have gone **after a total of half of hour** from when he left home?



Comment on this question

Request Help

Type your answer below (mathematical expression):

-

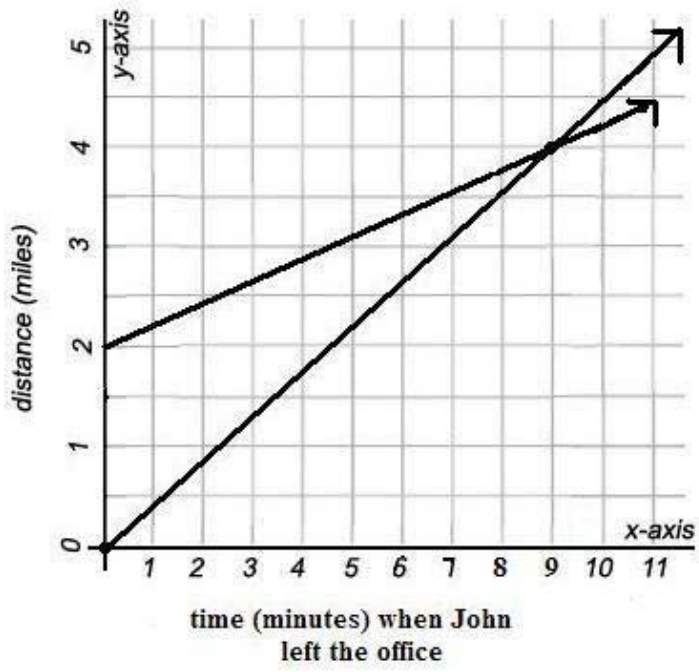
Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Dan left the office to jog in the nearby park. His co-worker, John, realized that Dan left his cell phone behind. After Dan had jogged 2 miles, his co-worker ran after him to give his phone back. The graph shows the distance John and Dan have traveled starting from the time John left the office.

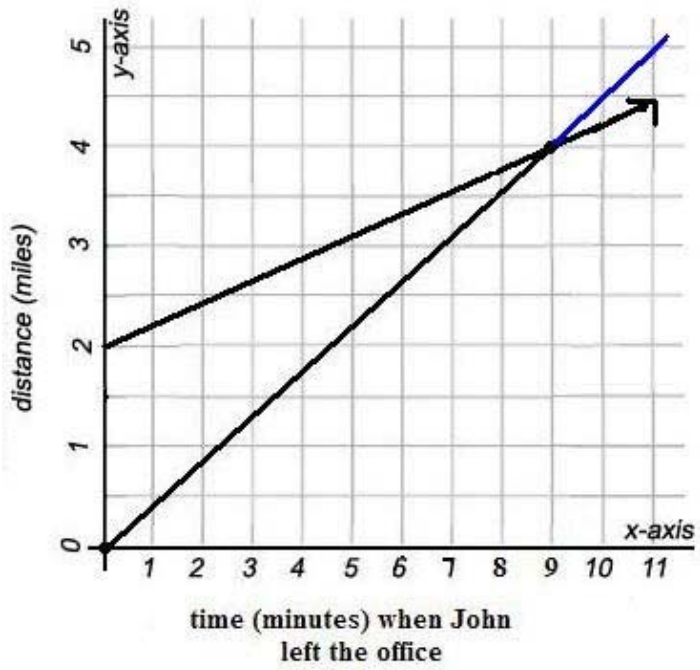
If John keeps running at the same speed, how far will he have gone **after a total of 11 minutes** from when he left the office?



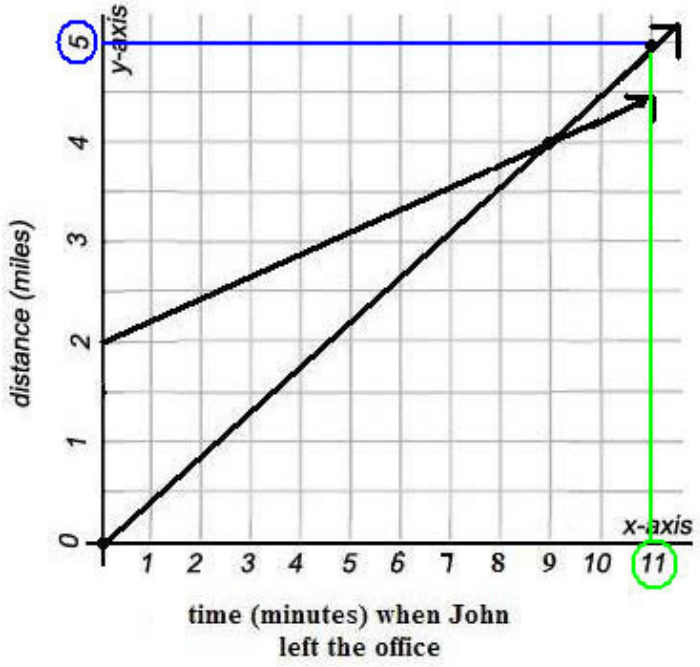
Solution:

If we follow John's line, where will it be after 11 minutes?

Take a look at this line extended.



Then we find the point where John has run for 11 minutes.



If he runs at the same pace for 11 minutes he will have ridden 5 miles.

Comment on this question

Select one:

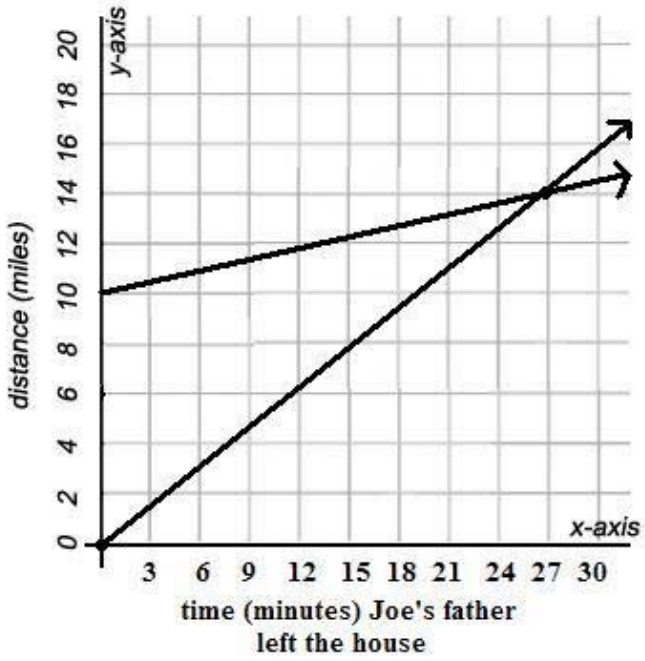
- I have read the example and now I am ready to try again.

Submit Answer
Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Jack went yo school on his bike but he forgot his homework. He was 10 miles away when his father noticed. His father got on his bike and rode after him. The graph shows the distance Jack and his father have traveled starting from the time he left the house.

If Jack's father keeps riding at the same speed, how far will he have gone **after a total of half of hour** from when he left home?



Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question
If he rides at the same pace for 1/2 hour or 30 minutes he will have ridden 16 miles. Type in 16.
Comment on this hint
Type your answer below (mathematical expression):

- 16

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

Assistment #25542

Assistment

You are previewing content.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company A** charge per snack?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	7.00

Company B

# of Snacks	Cost
0	16.00
1	17.50
2	19.00
3	20.50
4	22.00

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Two car garages offer car repairs at different prices. The tables below show the cost for each garage.

How many dollars does **Car garage A** charge per repair?

Car garage A

# of Repairs	Cost
0	50.00
1	55.00
2	60.00
3	65.00
4	70.00

Car garage B

# of Repairs	Cost
0	1.00
1	8.50
2	16.00
3	23.50
4	31.00

Solution:

To find how many dollars car garage A charges for each repair, we must find the difference between the cost of 1 repair and the cost of 2 repairs.

Take a look at this image:

Car garage A

# of Repairs	Cost
0	50.00
1	55.00
2	60.00
3	65.00
4	70.00

Car garage A charges 5.00 per repair.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company A** charge per snack?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	7.00

Company B

# of Snacks	Cost
0	16.00
1	17.50
2	19.00
3	20.50
4	22.00

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

Company A charges 1.25 per snack. Type in 1.25

Comment on this hint

Type your answer below (mathematical expression):

- 1.25

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25545

Assistment

You are previewing content.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company B** charge per snack?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	8.00

Company B

# of Snacks	Cost
0	16.00
1	17.50
2	19.00
3	20.50
4	22.00

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Two car garages offer car repairs at different prices. The tables below show the cost for each garage.

How many dollars does **Car garage B** charge per repair?

Car garage A

# of Repairs	Cost
0	50.00
1	55.00
2	60.00
3	65.00
4	70.00

Car garage B

# of Repairs	Cost
0	1.00
1	8.50
2	16.00
3	23.50
4	31.00

Solution:

To find how many dollars car garage B charges for each repair, we must find the difference between the cost of 1 repair and the cost of 2 repairs.

Take a look at this image:

Car garage B

# of Repairs	Cost
0	1.00
1	8.50
2	16.00
3	23.50
4	31.00

7.50

7.50

Car garage B charges 7.50 per repair.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

How many dollars does **Company B** charge per snack?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	8.00

Company B

# of Snacks	Cost
0	16.00
1	17.50
2	19.00
3	20.50
4	22.00

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

Company B charges 1.50 per snack. Type in 1.50

Comment on this hint

Type your answer below (mathematical expression):

- 1.50

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25548

Assistment

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

How many **dollars is she saving each week**?

Comment on this question

Request Help

Type your answer below (mathematical expression):

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Sam is saving money to buy a book. His parents gave him some money to start his savings. He will also be saving half his allowance each week. This equation shows the **S** dollars he has after **w** weeks:
S = 15 + 2w

How many **dollars is he saving each week**?

Solution:

To find how much he is saving each week, find the difference between how much he has saved after 0 weeks and after 1 week.

After 0 weeks, he has saved:

$S = 15 + 2w$

$S_0 = 15 + 2 * 0$

$S_0 = 15$

After 1 weeks, he has saved:

$S = 15 + 2\ w$
$S_1 = 15 + 2 * 1$
$S_1 = 15 + 2$
$S_1 = 17$

Here is a table showing what we now know.

Week	Savings
0	15
1	17

The difference between his savings after 0 and 1 weeks is 17 - 15 = 2. Thus, he saves **2** dollars each week.

Notice that **2** is the coefficient of **w**, and can be read from the equation as long as it is in the form y=mx+b.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

How many **dollars is she saving each week**?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 7 dollars. Type in 7

Comment on this hint

Type your answer below (mathematical expression):

- 7

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25627

You are previewing content.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

How many **dollars did her grandparents give her**?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Sam is saving money to buy a book. His parents gave him some money to start his savings. He will also be saving half his allowance each week. This equation shows the **S** dollars he has after **w** weeks:
S = 15 + 2w

How many **dollars did his parents give him**?

Solution:

The amount his parents gave him is what he has in the beginning after 0 weeks.

After 0 weeks, he has saved:

$S = 15 + 2w$

$S_0 = 15 + 2 * 0$

$S_0 = 15$

The amount of money that his parents gave Sam to **start** saving was 15 dollars.

You could also have found the answer by looking at the constant term in the equation written in y=mx+**b** form. The correct answer is 15.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

How many **dollars did her grandparents give her**?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 40 dollars. Type in 40

Comment on this hint

Type your answer below (mathematical expression):

- 40

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25631

You are previewing content.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

If we plot this equation on a graph where her savings is represented by the y-axis, what is the y-intercept of this equation?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Sam is saving money to buy a book. His parents gave him some money to start his savings. He will also be saving half his allowance each week. This equation shows the **S** dollars he has after **w** weeks:
S = 15 + 2w

If we plot this equation on a graph where his savings is represented by the y-axis, what is the y-intercept of this equation?

Solution:

The equation is in y=mx+**b** form. **b** represents the y-intercept.

The equation is S = 2w + 15. That means that the y-intercept is **15**.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer
Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

If we plot this equation on a graph where her savings is represented by the y-axis, what is the y-intercept of this equation?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question
The correct answer is 40. Type in 40
Comment on this hint
Type your answer below (mathematical expression):

- 40

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

Assistment #25635

Assistment

You are previewing content.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

What is the coefficient of the **w** in the equation?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Sam is saving money to buy a book. His parents gave him some money to start his savings. He will also be saving half his allowance each week. This equation shows the **S** dollars he has after **w** weeks:
S = 15 + 2w

If we plot this equation on a graph where his savings is represented by the y-axis, what is the y-intercept of this equation?

Solution:

The coefficient is the value that w is multiplied by.

You can look at the equation and the coefficient of x is the number multiplied by x.
S = 15 + 2w

So the coeficient of w is 2.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer
Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the savings S she has after w weeks:
S = 40 + 7w

What is the coefficient of the w in the equation?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question
The correct answer is 7. Type in 7
Comment on this hint
Type your answer below (mathematical expression):

- 7

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

Assistment #25685

Assistment

You are previewing content.
Use the properties of equality to solve the equation for **x**.

2x - 40 = 60

What is the value of x?

Comment on this question

Request Help

Type your answer below (mathematical expression):

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Use the properties of equality to solve the equation for x.

5x - 25 = 75

What is the value of x?

Solution:

Start by separating the variable expressions from the constants by adding 25 to both sides.

$$\begin{aligned} 5x - 25 &= 75 \\ 5x - 25 + 25 &= 75 + 25 \\ 5x &= 100 \end{aligned}$$

Next, we divide both sides by 5 and this gives:

$$\begin{aligned} 5x &= 100 \\ 5x/5 &= 100/5 \\ x &= 20 \end{aligned}$$

The value of x is 20.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Use the properties of equality to solve the equation for **x**.

2x - 40 = 60

What is the value of x?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The value of x is 50. Type in 50

Comment on this hint

Type your answer below (mathematical expression):

- 50

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25688

You are previewing content.
Use the properties of equality to solve the equation for **x**.

4 + 2x = 10x - 12

What is the value of x?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Use the properties of equality to solve the equation for **x**.

15 + 14x = 19x - 50

What is the value of x?

Solution:

Start by using the properties of equality to get the variable terms on one side and the constants on the other.

Adding 50 to both sides gives you:

$$\begin{aligned} 15 + 14x &= 19x - 50 \\ 50 + 15 + 14x &= 19x - 50 + 50 \\ 65 + 14x &= 19x \end{aligned}$$

Next, subtract 14x from both sides and you get:

$$65 + 14x = 19x$$
$$65 + 14x - 14x = 19x - 14x$$
$$65 = 5x$$

Finally, divide both sides by 5.

$$5x = 65$$
$$5x/5 = 65/5$$
$$x = 13$$

The value of x is 13.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Use the properties of equality to solve the equation for **x**.

4 + 2x = 10x - 12

What is the value of x?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The value of x is 2. Type in 2

Comment on this hint

Type your answer below (mathematical expression):

- 2

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25691

Assistment

You are previewing content.
Use the properties of equality to solve the equation for **x**.

4(6 + x) = 2x

What is the value of x?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Use the properties of equality to solve the equation for **x**.

2(21 + 3x) = 8x

What is the value of x?

Solution:

Start by distributing the 2 into the expression in parenthesis.

$$\begin{aligned} 2(21 + 3x) &= 8x \\ 2 * 21 + 2 * 3x &= 8x \\ 42 + 6x &= 8x \end{aligned}$$

Now, subtract 6x from both sides:

$$\begin{aligned} 42 + 6x &= 8x \\ 42 + 6x - 6x &= 8x - 6x \\ 42 &= 2x \end{aligned}$$

To find the value of x, divide both sides by 2.

$$42 = 2x$$
$$42/2 = 2x/2$$
$$21 = x$$

The value of x is 21.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Use the properties of equality to solve the equation for **x**.

4(6 + x) = 2x

What is the value of x?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The value of x is -12. Type in -12

Comment on this hint

Type your answer below (mathematical expression):

- -12

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25751

You are previewing content.
Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

What is the equation for Cost (**C**) if the school buys **s** snacks from Company A?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Comment on this question

Request Help

Select one:

- C = 0.25 + 15
- C = 0.25s + 15
- C = 15.25s+ 15
- C = 15s+ 15.25

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Two car garages offer car repairs at different prices. The tables below show the cost for each garage.

What is the equation for Cost (**C**) if Car garage A performs **r** repairs?

Car garage A

# of Repairs	Cost
0	50.00
1	55.00
2	60.00
3	65.00
4	70.00

Car garage B

# of Repairs	Cost
0	1.00
1	8.50
2	16.00
3	23.50
4	31.00

Solution:

The initial cost is $50. And it is increased by $5.00 for each repair it performs.

The cost of repairs for **r** costumers would be $5**r**.

The total cost is the 50 dollars and the 5r or in algebra it would be C = 50 + 5r.
So the equation for the cost is C = 5r + 50.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer
Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

What is the equation for Cost (**C**) if the school buys **s** snacks from Company A?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is C = 0.25s + 15. Select C = 0.25s + 15

Comment on this hint

Select one:

- C = 0.25 + 15
- C = 0.25s + 15
- C = 15.25s+ 15
- C = 15s+ 15.25

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25756

You are previewing content.
Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables above show the cost for each company.

The equations for Cost (**C**) for **s** snacks are:
C = 0.25s + 15 for Company A
C = 0.5s for Company B

What is the number of snacks the school must buy for the cost to be equal for the two companies?

Company A

# of Snacks	Cost
0	15.00
1	15.25
2	15.50
3	15.75
4	16.00

Company B

# of Snacks	Cost
0	0
1	0.50
2	1.00
3	1.50
4	2.00

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Two car garages offer car repairs at different prices. The tables below show the cost for each garage.

The equations for Cost (**C**) for **r** repairs are:
C = 5r + 50 for Car garage A
C = 7.5r for Car garage B

What is the number of repairs that must be performed by each car garage so that the total cost is the same for both?

Car garage A

# of Repairs	Cost
0	50.00
1	55.00
2	60.00
3	65.00
4	70.00

Car garage B

# of Repairs	Cost
0	0.00
1	7.50
2	15.00
3	22.50
4	30.00

Solution:

Given the two equations, you must set the Cost equal to each other. That is:

Cost for car garage A = Cost for car garage B
5r + 50 = 7.5r

Now we subtract 5r from both sides and we get:

5r + 50 = 7.5r
5r - 5r + 50 = 7.5r - 5r
50 = 2.5r

To get the final result we can divide both sides by 2.5. This way we find r's value.

2.5r/2.5 = 50/2.5
r = 20

We can verify the result by substituting '20' in each equation to check if the costs are the same.
C = 5 * 20 + 50 for Car garage A
C = 100 + 50
C = 150

C = 7.5 * 20 for Car garage B
C = 150

If a costumer ask for 20 repairs to be done on his car from both car garages, it would cost the same price.

Comment on this question
Select one:

- I have read the example and now I am ready to try again.

Submit Answer
Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables above show the cost for each company.

The equations for Cost (**C**) for **s** snacks are:
C = 0.25s + 15 for Company A
C = 0.5s for Company B

What is the number of snacks the school must buy for the cost to be equal for the two companies?

Company A		Company B	
# of Snacks	Cost	# of Snacks	Cost
0	15.00	0	0
1	15.25	1	0.50
2	15.50	2	1.00
3	15.75	3	1.50
4	16.00	4	2.00

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 60 snacks. Type in 60

Comment on this hint

Type your answer below (mathematical expression):

- 60

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25759

Assistment

You are previewing content.
Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the savings **S** she has after **w** weeks:
S = 30 + 5w

After how many weeks will Ming be able to buy a bike that costs $125?

Comment on this question

Request Help

Type your answer below (mathematical expression):

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Sam is saving money to buy a book. His parents gave him some money to start his savings. He will also be saving half his allowance each week. This equation shows the **S** dollars he has after **w** weeks:
S = 15 + 2w

After how many weeks will Sam be able to buy a book that costs $63?

Solution:

Sam needs $63 to buy the book. So the value of S in the equation is given to be 63:
63= 15 + 2w

Solving for w, we first subtract 15 from both sides and we get:

63 - 15 = 15 - 15 + 2w
48 = 2w

Dividing both sides by 2 gives you:

48/2 = 2w/2

24 = w

Sam will be able to buy a book costing $63 after 24 weeks.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the savings **S** she has after **w** weeks:
S = 30 + 5w

After how many weeks will Ming be able to buy a bike that costs $125?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 19 weeks. Type in 19.

Comment on this hint

Type your answer below (mathematical expression):

- 19

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25686

Assistment

You are previewing content.
Use the properties of equality to solve the equation for **x**.

7x + 14 = 84

What is the value of x?

Comment on this question

Start by separating the variable expressions from the constants by subtracting 14 from both sides.

Comment on this hint

Subtracting 14 from both sides gives you:

$$\begin{aligned} 7x + 14 &= 84 \\ 7x + 14 - 14 &= 84 - 14 \\ 7x &= 70 \end{aligned}$$

Comment on this hint

We divide both sides by 7 and this gives:

$$\begin{aligned} 7x &= 70 \\ 7x/7 &= 70/7 \\ x &= 10 \end{aligned}$$

The value of x is 10. Type in 10

Comment on this hint

Type your answer below (mathematical expression):

- 10

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25689

You are previewing content.
Use the properties of equality to solve the equation for **x**.

6x - 30 = 42 - 18x

What is the value of x?

Comment on this question

Start by using the properties of equality to get the variable terms on one side and the constants on the other.

Comment on this hint

Adding 30 to both sides gives you:

$$\begin{aligned} 6x - 30 &= 42 - 18x \\ 6x - 30 + 30 &= 42 - 18x + 30 \\ 6x &= 72 - 18x \end{aligned}$$

Comment on this hint

Add 18x to both sides:

$$\begin{aligned} 6x &= 72 - 18x \\ 6x + 18x &= 72 - 18x + 18x \\ 24x &= 72 \end{aligned}$$

Comment on this hint

Dividing both sides by 24 gives us the value of x:

$$\begin{aligned} 24x &= 72 \\ 24x/24 &= 72/24 \\ x &= 3 \end{aligned}$$

Type in 3

Comment on this hint

Type your answer below (mathematical expression):

- 3

Submit Answer
Correct!
You are done with this problem!

Comment on this problem

Assistment

Assistment #25692

You are previewing content.
Use the properties of equality to solve the equation for **x**.

6(20 - 5x) = 10x

What is the value of x?

Comment on this question

Start by distributing the 6 into the expression in parenthesis.

Comment on this hint

Distributing the 6 into the expression in parenthesis gives you:

$$\begin{aligned} 6(20 - 5x) &= 10x \\ 6 * 20 - 6 * 5x &= 10x \\ 120 - 30x &= 10x \end{aligned}$$

Comment on this hint

Adding 30x to both sides gives you this:

$$\begin{aligned} 120 - 30x &= 10x \\ 120 - 30x + 30x &= 10x + 30x \\ 120 &= 40x \end{aligned}$$

Comment on this hint

Dividing both sides by 40 gives you the value of x:

$$\begin{aligned} 120 &= 40x \\ 120/40 &= 40x/40 \\ 3 &= x \end{aligned}$$

The value of x is 3. Type in 3

Comment on this hint

Type your answer below (mathematical expression):

- 3

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25753

Assistment

You are previewing content.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

What is the equation for Cost (**C**) if the school buys **s** snacks from Company A?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	8.00

Company B

# of Snacks	Cost
0	16.00
1	17.50
2	19.00
3	20.50
4	22.00

Comment on this question

The initial cost is $2. And it is increased by $1.25 for each snack they buy.

Comment on this hint

The cost of snacks for **s** students would be $1.25**s**.

Comment on this hint

The total cost is the 2 dollars and the 1.25s or in algebra it would be C = 2 + 1.25s.
So the equation for the cost is C = 1.25s + 2. Select C = 1.25s + 2

Comment on this hint

Select one:

- C = 2 + 3.25s
- C = 2s + 1.25
- C = 1.25s + 2

- C = 2s + 3.25

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25757

Assistment

You are previewing content.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables above show the cost for each company.

The equations for Cost (**C**) for **s** snacks are:
C = 1.25s + 2 for Company A
C = 1s + 16 for Company B

What is the number of snacks the school must buy for the cost to be equal for the two companies?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	8.00

Company B

# of Snacks	Cost
0	16.00
1	17.00
2	18.00
3	19.00
4	20.00

Comment on this question

Given the two equations, you must set the Cost equal to each other. That is:

Cost for company A = Cost for company B
1.25s + 2 = 1s + 16

Comment on this hint

Now we subtract 1s from both sides and we get:

1.25s + 2 = 1s + 16
1.25s - 1s + 2 = 1s - 1s + 16

$0.25s + 2 = 16$

Comment on this hint

Next, subtract 2 from both sides:

$$0.25s + 2 = 16$$
$$0.25s + 2 - 2 = 16 - 2$$
$$0.25s = 14$$

Comment on this hint

To get the final result we can divide both sides by 0.25. This way we find s' value.

$$0.25s/0.25 = 14/0.25$$
$$s = 56$$

Comment on this hint

We can verify the result by substituting '56' in each equation to check if the costs are the same.
C = 1.25 * 56 + 2 for Company A
C = 70 + 2
C = 72

C = 1 * 56 + 16 for Company B

C = 56 + 16
C = 72

If you buy 56 snacks from both companies, it would cost the same price. Please enter 56.

Comment on this hint
Type your answer below (mathematical expression):

- 56

Submit Answer
Correct!
You are done with this problem!

Comment on this problem

Assistment

Assistment #25760

You are previewing content.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

After how many weeks will Ming be able to buy a bike that costs $131?

Comment on this question

Ming needs $131 to buy the bike. So the value of S in the equation is given to be 131:

131= 40 + 7w

Solve for w.

Comment on this hint

Subtracting both sides by 40 gives you:

131 - 40 = 40 - 40 + 7w
91 = 7w

Comment on this hint

Dividing both sides by 7 gives you:

91/7 = 7w/7
13 = w

Ming will be able to buy a bike costing $131 after 13 weeks.
Type in 13.

Comment on this hint

Type your answer below (mathematical expression):

- 13

Submit Answer

Correct!
You are done with this problem!

Comment on this problem

Assistment #25687

Assistment

You are previewing content.
Use the properties of equality to solve the equation for **x**.

7x + 14 = 84

What is the value of x?

Comment on this question

Request Help

Type your answer below (mathematical expression):

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Use the properties of equality to solve the equation for x.

5x - 25 = 75

What is the value of x?

Solution:

Start by separating the variable expressions from the constants by adding 25 to both sides.

$$\begin{aligned} 5x - 25 &= 75 \\ 5x - 25 + 25 &= 75 + 25 \\ 5x &= 100 \end{aligned}$$

Next, we divide both sides by 5 and this gives:

$$\begin{aligned} 5x &= 100 \\ 5x/5 &= 100/5 \\ x &= 20 \end{aligned}$$

The value of x is 20.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Use the properties of equality to solve the equation for x.

7x + 14 = 84

What is the value of x?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The value of x is 10. Type in 10

Comment on this hint

Type your answer below (mathematical expression):

- 10

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25690

You are previewing content.
Use the properties of equality to solve the equation for **x**.

6x - 30 = 42 - 18x

What is the value of x?

Comment on this question

Request Help

Type your answer below (mathematical expression):

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Use the properties of equality to solve the equation for **x**.

15 + 14x = 19x - 50

What is the value of x?

Solution:

Start by using the properties of equality to get the variable terms on one side and the constants on the other.

Adding 50 to both sides gives you:

$$\begin{aligned} 15 + 14x &= 19x - 50 \\ 50 + 15 + 14x &= 19x - 50 + 50 \\ 65 + 14x &= 19x \end{aligned}$$

Next, subtract 14x from both sides and you get:

$$65 + 14x = 19x$$
$$65 + 14x - 14x = 19x - 14x$$
$$65 = 5x$$

Finally, divide both sides by 5.

$$5x = 65$$
$$5x/5 = 65/5$$
$$x = 13$$

The value of x is 13.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Use the properties of equality to solve the equation for **x**.

6x - 30 = 42 - 18x

What is the value of x?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The value of x is 3. Type in 3

Comment on this hint

Type your answer below (mathematical expression):

- 3

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25693

Assistment

You are previewing content.
Use the properties of equality to solve the equation for **x**.

6(20 - 5x) = 10x

What is the value of x?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Use the properties of equality to solve the equation for **x**.

2(21 + 3x) = 8x

What is the value of x?

Solution:

Start by distributing the 2 into the expression in parenthesis.

$$\begin{aligned} 2(21 + 3x) &= 8x \\ 2 * 21 + 2 * 3x &= 8x \\ 42 + 6x &= 8x \end{aligned}$$

Now, subtract 6x from both sides:

$$\begin{aligned} 42 + 6x &= 8x \\ 42 + 6x - 6x &= 8x - 6x \\ 42 &= 2x \end{aligned}$$

To find the value of x, divide both sides by 2.

$$42 = 2x$$
$$42/2 = 2x/2$$
$$21 = x$$

The value of x is 21.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Use the properties of equality to solve the equation for **x**.

6(20 - 5x) = 10x

What is the value of x?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The value of x is 3. Type in 3

Comment on this hint

Type your answer below (mathematical expression):

- 3

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25755

Assistment

You are previewing content.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

What is the equation for Cost (**C**) if the school buys **s** snacks from Company A?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	8.00

Company B

# of Snacks	Cost
0	16.00
1	17.50
2	19.00
3	20.50
4	22.00

Comment on this question

Request Help

Select one:

- C = 2 + 3.25s
- C = 2s + 1.25
- C = 1.25s + 2
- C = 2s + 3.25

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Two car garages offer car repairs at different prices. The tables below show the cost for each garage.

What is the equation for Cost (**C**) if Car garage A performs **r** repairs?

Car garage A

# of Repairs	Cost
0	50.00
1	55.00
2	60.00
3	65.00
4	70.00

Car garage B

# of Repairs	Cost
0	1.00
1	8.50
2	16.00
3	23.50
4	31.00

Solution:

The initial cost is $50. And it is increased by $5.00 for each repair it performs.

The cost of repairs for **r** costumers would be $5**r**.

The total cost is the 50 dollars and the 5r or in algebra it would be C = 50 + 5r.
So the equation for the cost is C = 5r + 50.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables below show the cost for each company.

What is the equation for Cost (**C**) if the school buys **s** snacks from Company A?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	8.00

Company B

# of Snacks	Cost
0	16.00
1	17.50
2	19.00
3	20.50
4	22.00

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is C = 1.25s + 2. Select C = 1.25s + 2

Comment on this hint

Select one:

- C = 2 + 3.25s
- C = 2s + 1.25
- C = 1.25s + 2
- C = 2s + 3.25

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25758

Assistment

You are previewing content.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables above show the cost for each company.

The equations for Cost (**C**) for **s** snacks are:
C = 1.25s + 2 for Company A
C = 1s + 16 for Company B

What is the number of snacks the school must buy for the cost to be equal for the two companies?

Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	8.00

Company B

# of Snacks	Cost
0	16.00
1	17.00
2	18.00
3	19.00
4	20.00

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Two car garages offer car repairs at different prices. The tables below show the cost for each garage.

The equations for Cost (**C**) for **r** repairs are:
C = 5r + 50 for Car garage A
C = 7.5r for Car garage B

What is the number of repairs that must be performed by each car garage so that the total cost is the same for both?

Car garage A

# of Repairs	Cost
0	50.00
1	55.00
2	60.00
3	65.00
4	70.00

Car garage B

# of Repairs	Cost
0	0.00
1	7.50
2	15.00
3	22.50
4	30.00

Solution:

Given the two equations, you must set the Cost equal to each other. That is:

Cost for car garage A = Cost for car garage B
5r + 50 = 7.5r

Now we subtract 5r from both sides and we get:

5r + 50 = 7.5r
5r - 5r + 50 = 7.5r - 5r
50 = 2.5r

To get the final result we can divide both sides by 2.5. This way we find r's value.

2.5r/2.5 = 50/2.5
r = 20

We can verify the result by substituting '20' in each equation to check if the costs are the same.
C = 5 * 20 + 50 for Car garage A
C = 100 + 50
C = 150

C = 7.5 * 20 for Car garage B
C = 150

If a costumer ask for 20 repairs to be done on his car from both car garages, it would cost the same price.

Comment on this question
Select one:

- I have read the example and now I am ready to try again.

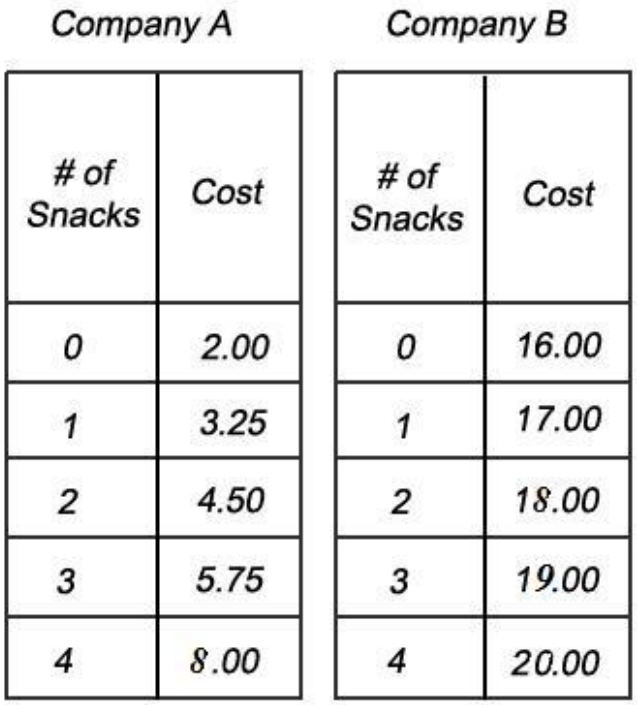
Submit Answer
Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Booker T. Washington Middle School found two companies that would deliver healthy snacks to their school. The tables above show the cost for each company.

The equations for Cost (**C**) for **s** snacks are:
C = 1.25s + 2 for Company A
C = 1s + 16 for Company B

What is the number of snacks the school must buy for the cost to be equal for the two companies?



Company A

# of Snacks	Cost
0	2.00
1	3.25
2	4.50
3	5.75
4	8.00

Company B

# of Snacks	Cost
0	16.00
1	17.00
2	18.00
3	19.00
4	20.00

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 56 snacks. Type in 56

Comment on this hint

Type your answer below (mathematical expression):

- 56

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25761

Assistment

You are previewing content.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

After how many weeks will Ming be able to buy a bike that costs $131?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Sam is saving money to buy a book. His parents gave him some money to start his savings. He will also be saving half his allowance each week. This equation shows the **S** dollars he has after **w** weeks:
S = 15 + 2w

After how many weeks will Sam be able to buy a book that costs $63?

Solution:

Sam needs $63 to buy the book. So the value of S in the equation is given to be 63:
63= 15 + 2w

Solving for w, we first subtract 15 from both sides and we get:

63 - 15 = 15 - 15 + 2w
48 = 2w

Dividing both sides by 2 gives you:

48/2 = 2w/2
24 = w

Sam will be able to buy a book costing $63 after 24 weeks.

Comment on this question
Select one:

- I have read the example and now I am ready to try again.

Submit Answer
Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Ming is saving money to buy a bike. Her grandparents gave her some money to start her savings. She will also be saving half her allowance each week. This equation shows the **S** dollars she has after **w** weeks:
S = 40 + 7w

After how many weeks will Ming be able to buy a bike that costs $131?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question
The correct answer is 13 weeks. Type in 13
Comment on this hint
Type your answer below (mathematical expression):

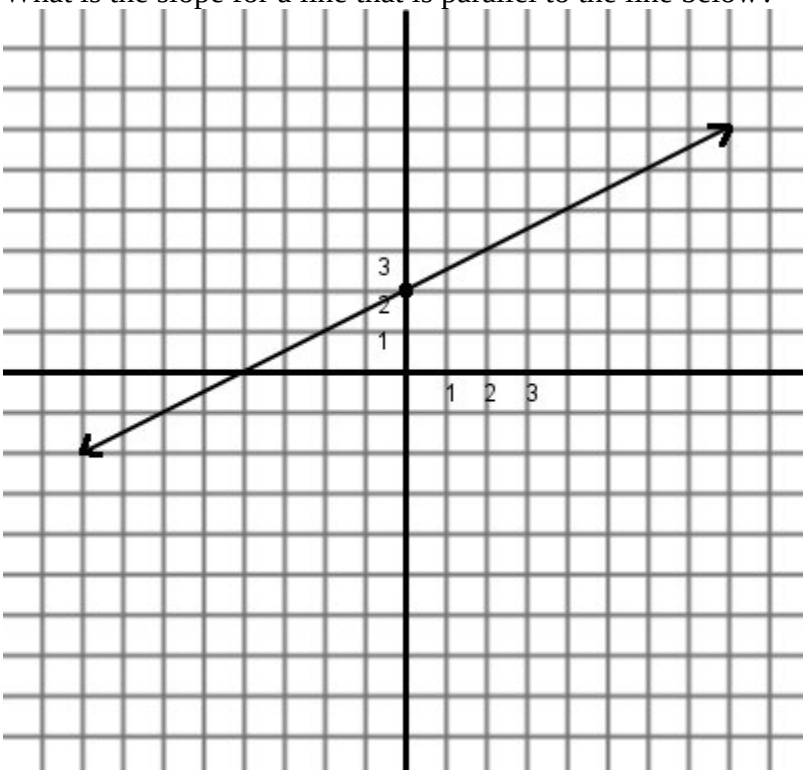
- 13

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

Assistment #14146

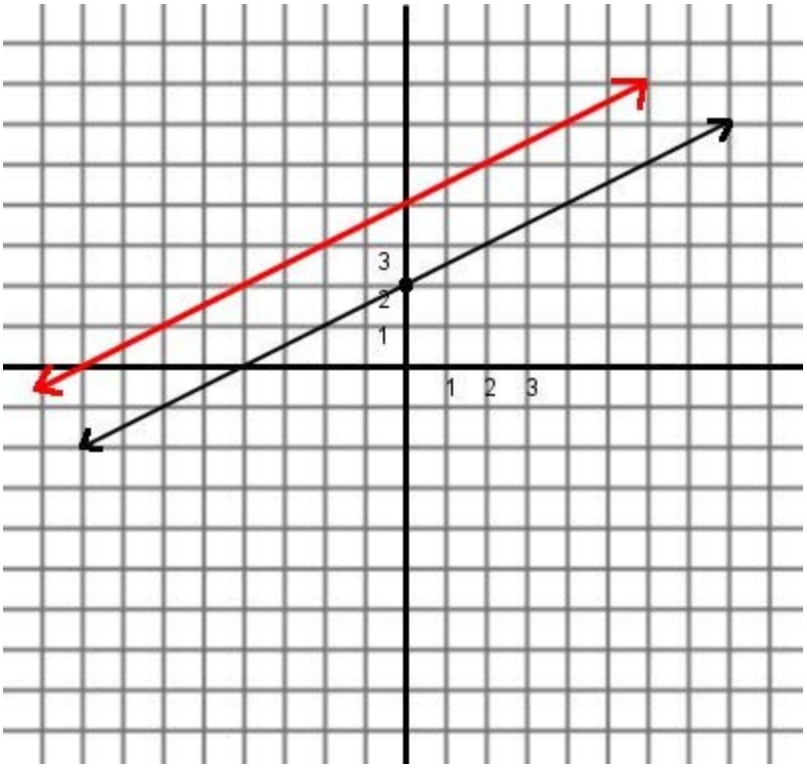
Assistment

You are previewing content.
What is the slope for a line that is parallel to the line below?



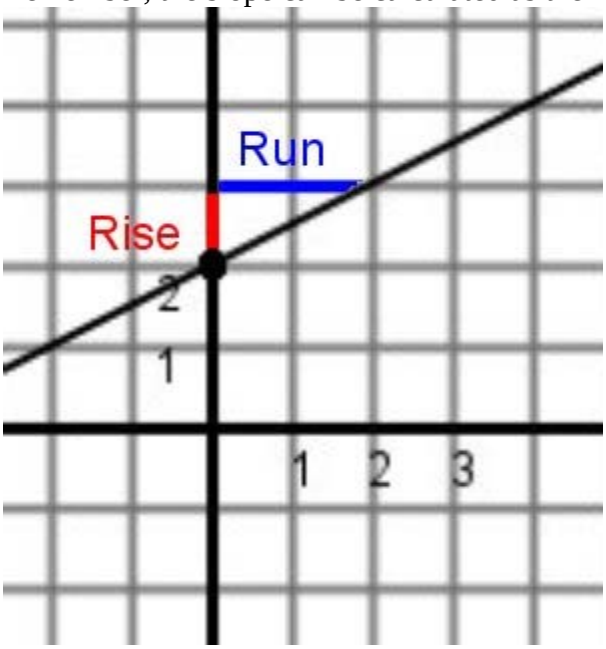
Comment on this question

Lines that are parallel have the same slope. Find the slope of the original line. The graph below shows a line in red that is parallel to the original line. They have the same slope.



Comment on this hint

Remember, the slope can be calculated as the rise over the run.



Comment on this hint

The rise in red is 1 and the run in blue is 2, so the slope of the line is 1/2

Comment on this hint

Since the slope of our line is 1/2, the slope of any line parallel to it would be the same. Enter 1/2

Comment on this hint

Type your answer below (mathematical expression):

- 1/2

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #14148

Assistment

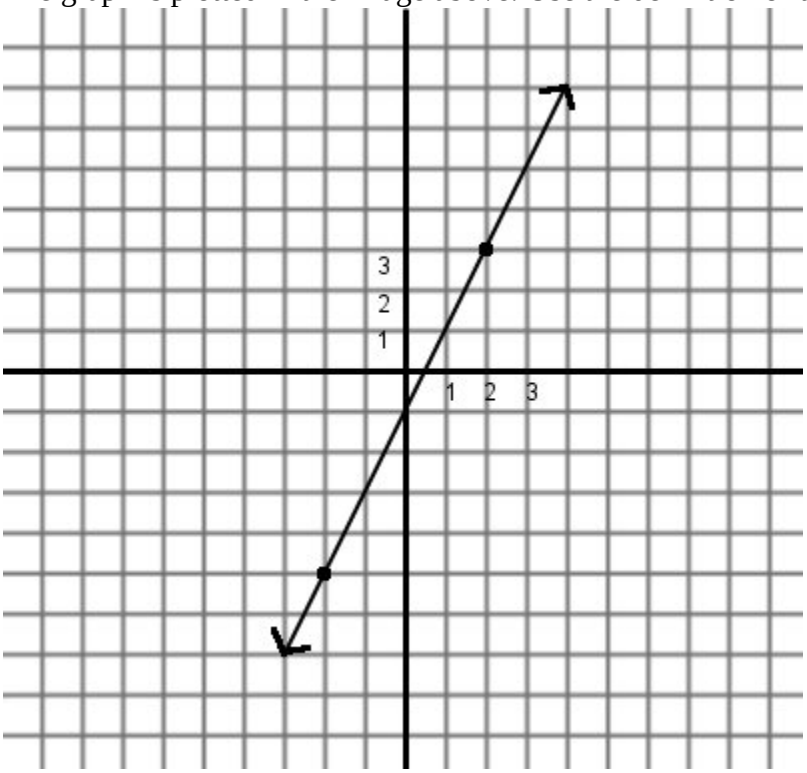
You are previewing content.
What is the slope of the line that goes through the points (2,3) and (-2, -5)?

Comment on this question

You may want to plot the points on graph paper first.

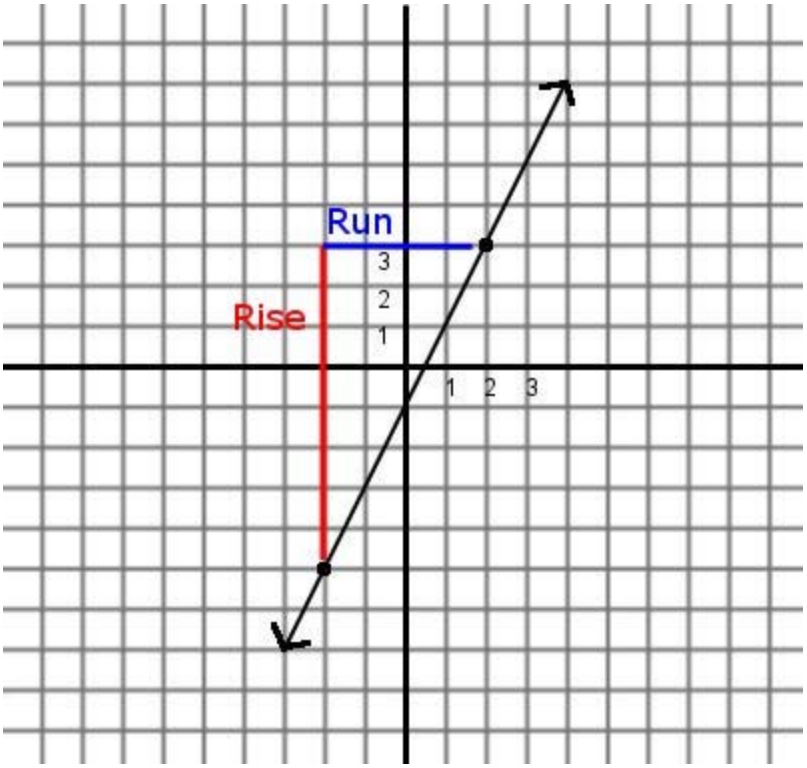
Comment on this hint

The graph is plotted in the image above. Use the definition of the slope.



Comment on this hint

We can calculate the slope from any two points using the rise over the run. Let's use the initial points.



Comment on this hint

The rise is 8 and the run is 4. So the slope is 8/4. Let's reduce this fraction.

Comment on this hint

8/4 is 2. So the slope of the line is 2.

Comment on this hint

Type your answer below (mathematical expression):

- 2

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #14149

Assistment

You are previewing content.

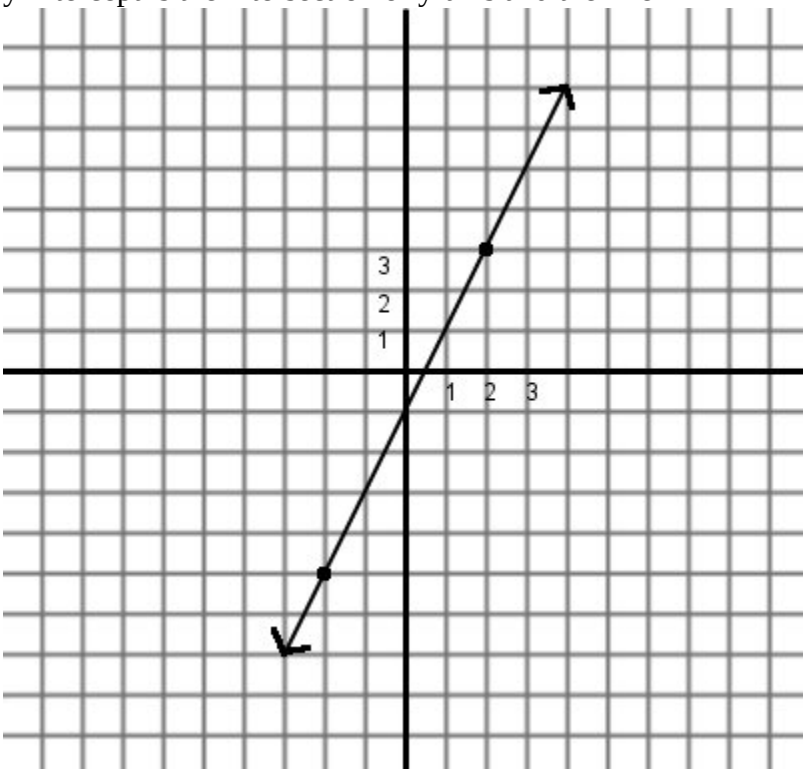
What is the y-intercept of the line that goes through the points (2, 3) and (-2, -5)?

Comment on this question

You may want to plot the points on graph paper first.

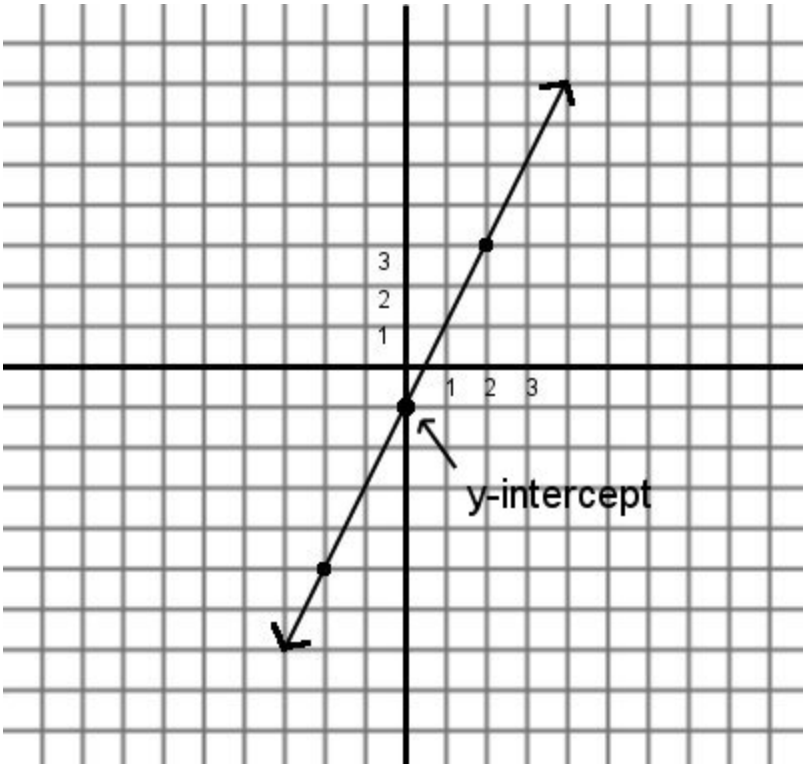
Comment on this hint

Shown below are the plotted points with a line running through them. Where is the y-intercept? The y-intercept is the intersection of y-axis and the line



Comment on this hint

The y-intercept is pointed out in the picture below.



Comment on this hint

The y-intercept is the value of y when x is 0. Here, it is -1. So enter -1

Comment on this hint

Type your answer below (mathematical expression):

- -1

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #14150

Assistment

You are previewing content.
The equation y = b + 1.5x passes through the point (4,7). What is the value of b?

Comment on this question

Since (4,7) is on the line, substitute in 4 for the value of x and 7 for the value of y. Now solve for b.

Comment on this hint

Substitute in as shown.

$$y = b + 1.5x$$

$$7 = b + 1.5(4)$$

Comment on this hint

Check your work against the work below. What is b?

$$y = b + 1.5x$$

$$7 = b + 1.5(4)$$

$$7 = b + 6$$

$$7 - 6 = b$$

Comment on this hint

The correct answer is 1. Please enter 1

Comment on this hint

Type your answer below:

- 1

Submit Answer

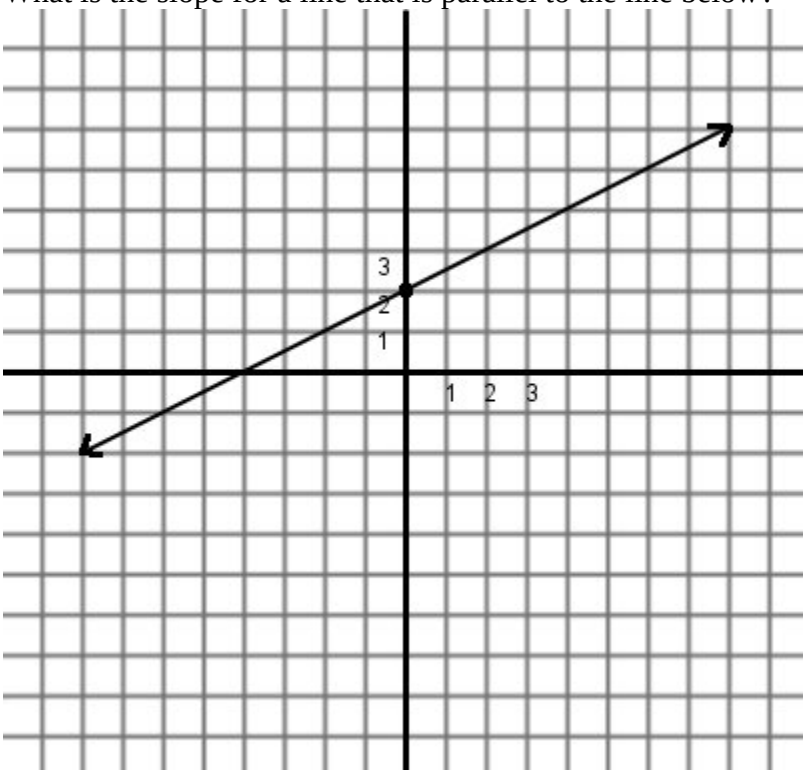
Correct!
You are done with this problem!

Comment on this problem

Assistment #25779

Assistment

You are previewing content.
What is the slope for a line that is parallel to the line below?



Comment on this question

Request Help

Type your answer below (mathematical expression):

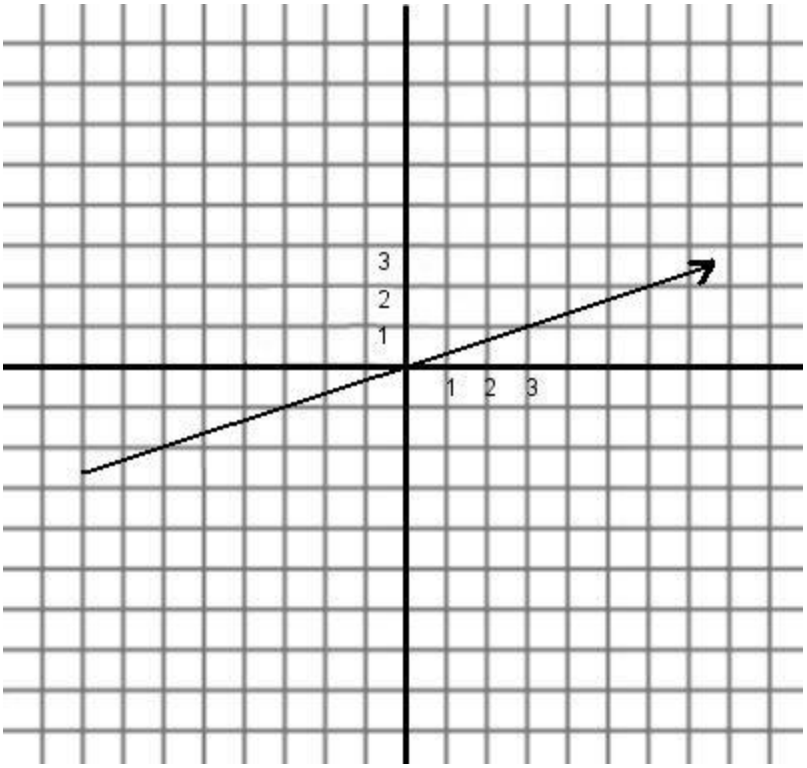
-

Submit Answer

Let's move on and figure out this problem

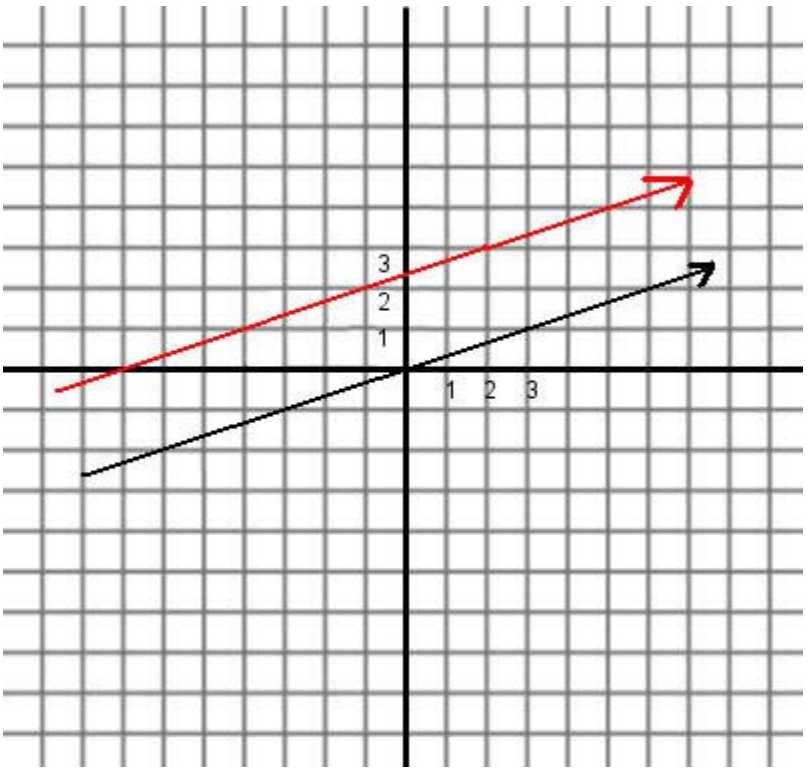
Let's look at the solution for a problem similar to the one in the red box above:

What is the slope for a line that is parallel to the line below?

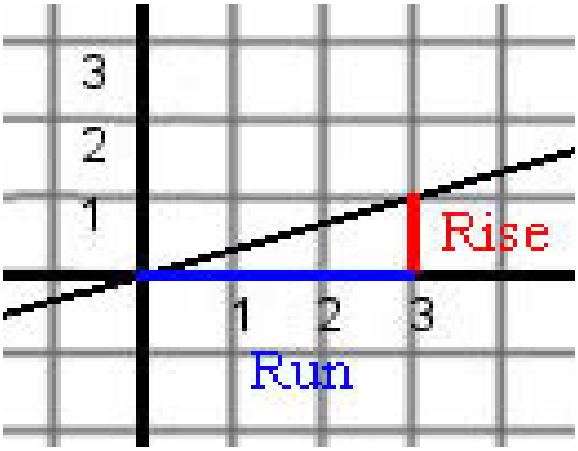


Solution:

Lines that are parallel have the same slope. Find the slope of the original line. The graph below shows a line in red that is parallel to the original line. They have the same slope.



Remember, the slope can be calculated as the rise over the run.



The rise is 1 and the run is 3, so the slope of the line is 1/3.

Since the slope of our line is 1/3, the slope of any line parallel to it would be the same.

Comment on this question

Select one:

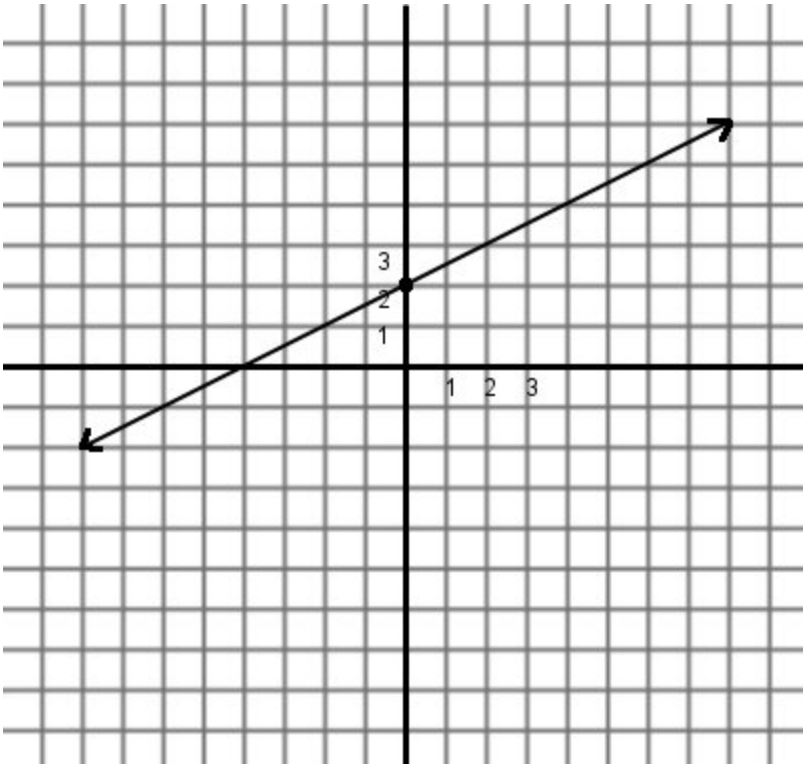
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the slope for a line that is parallel to the line below?



Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 1/2. Type in 1/2

Comment on this hint

Type your answer below (mathematical expression):

- 1/2

Submit Answer

Correct!

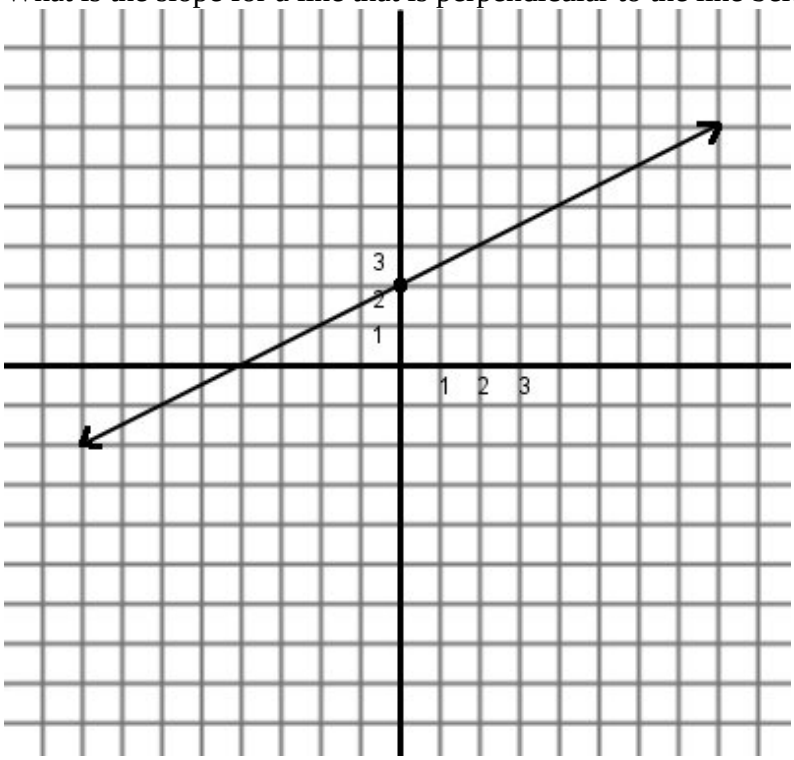
You are done with this problem!

Comment on this problem

Assistment #25841

Assistment

You are previewing content.
What is the slope for a line that is perpendicular to the line below?



Comment on this question

Request Help

Type your answer below (mathematical expression):

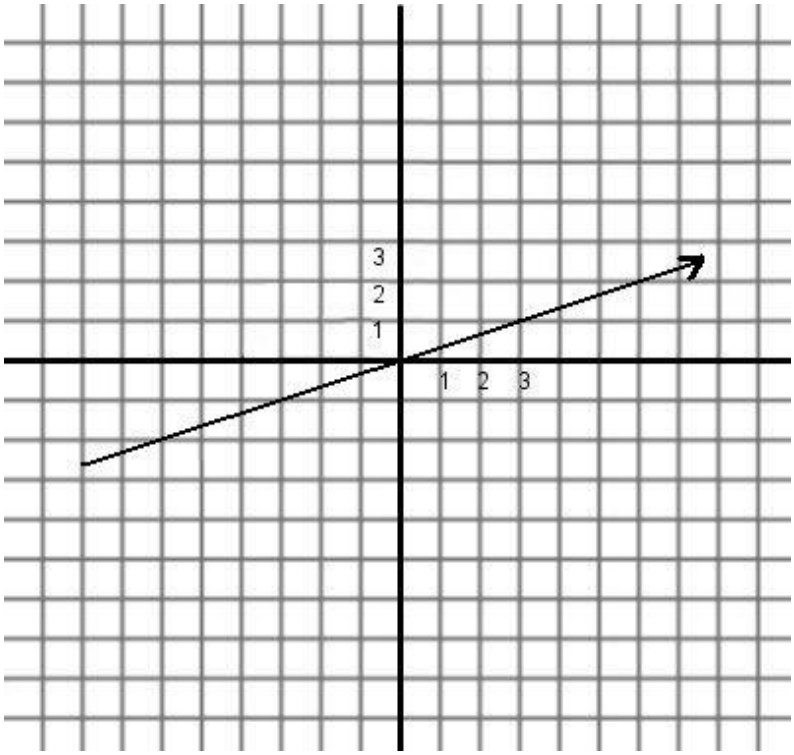
-

Submit Answer

Let's move on and figure out this problem

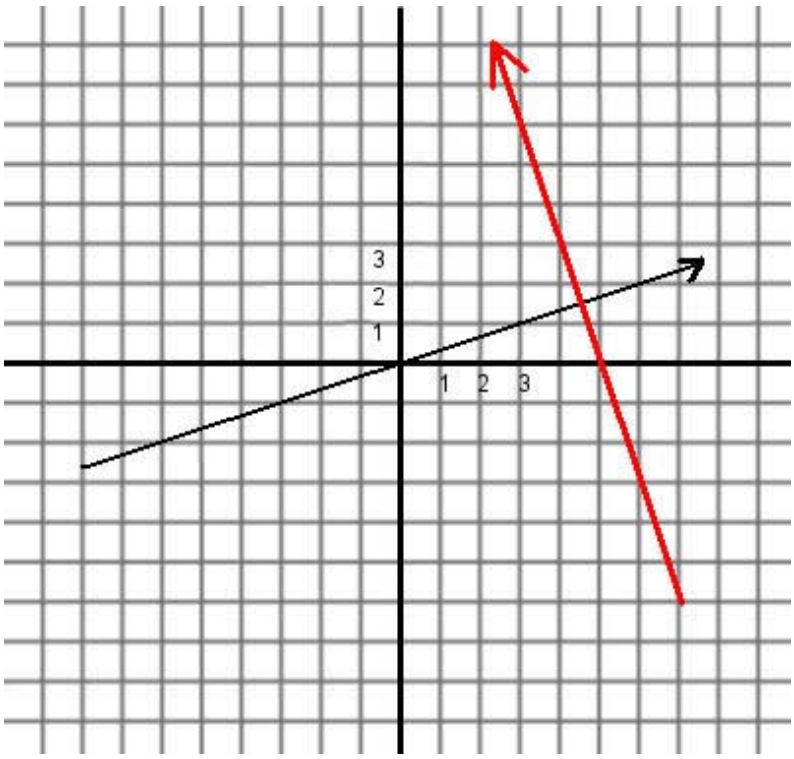
Let's look at the solution for a problem similar to the one in the red box above:

What is the slope for a line that is perpendicular to the line below?

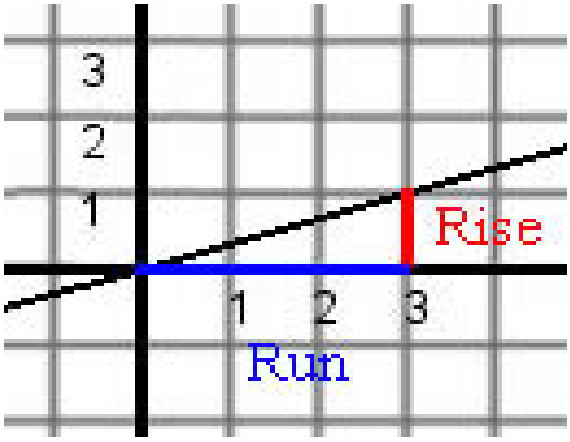


Solution:

The slope of a perpendicular line is similar to the slope of the original line. First the rise and run are just reversed and second if the original line slopes up (or have a positive slope, as in this problem) the perpendicular line will slope down (or have a negative slope).

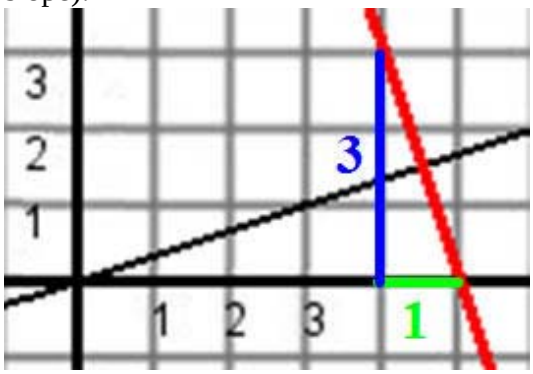


The slope is the rise over the run. Here, the rise is 1 and the run is 3.



So the slope is 1/3. This is the slope of the original line.

The slope of the perpendicular line is -3/1
since the rise and the run have been reversed. It is also negative since the line is decreasing (or has a negative slope).



Comment on this question

Select one:

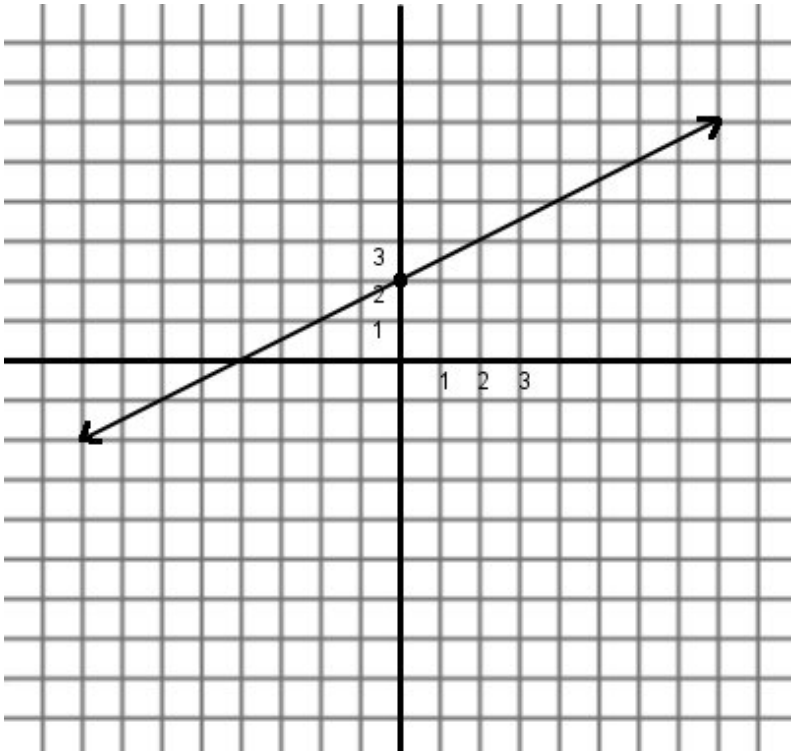
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the slope for a line that is perpendicular to the line below?



Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is -2. Type in -2

Comment on this hint

Type your answer below (mathematical expression):

- -2

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25846

Assistment

You are previewing content.
What is the slope of the line that goes through the points (2,3) and (-2, -5)?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

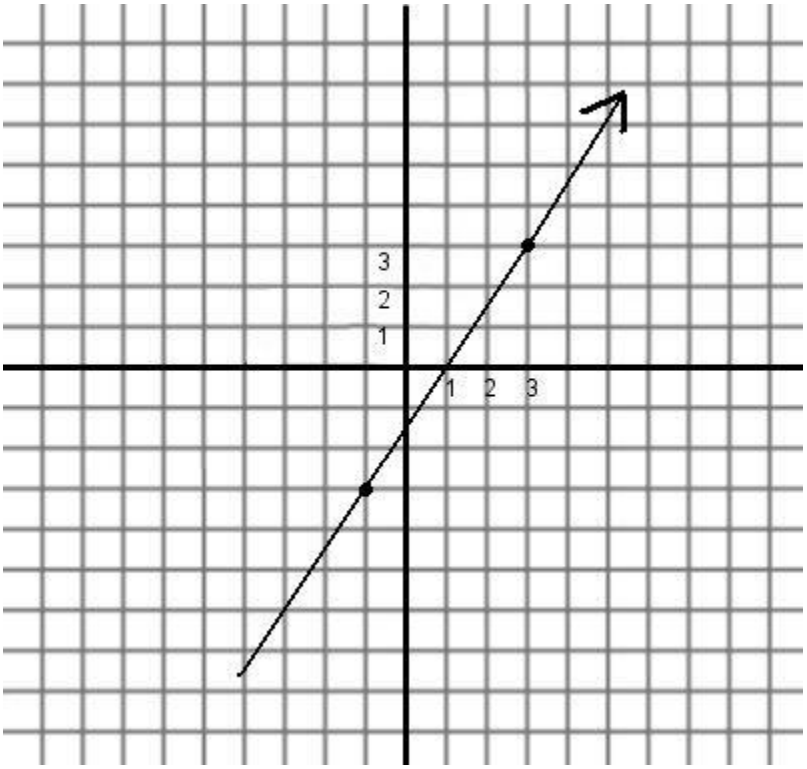
Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

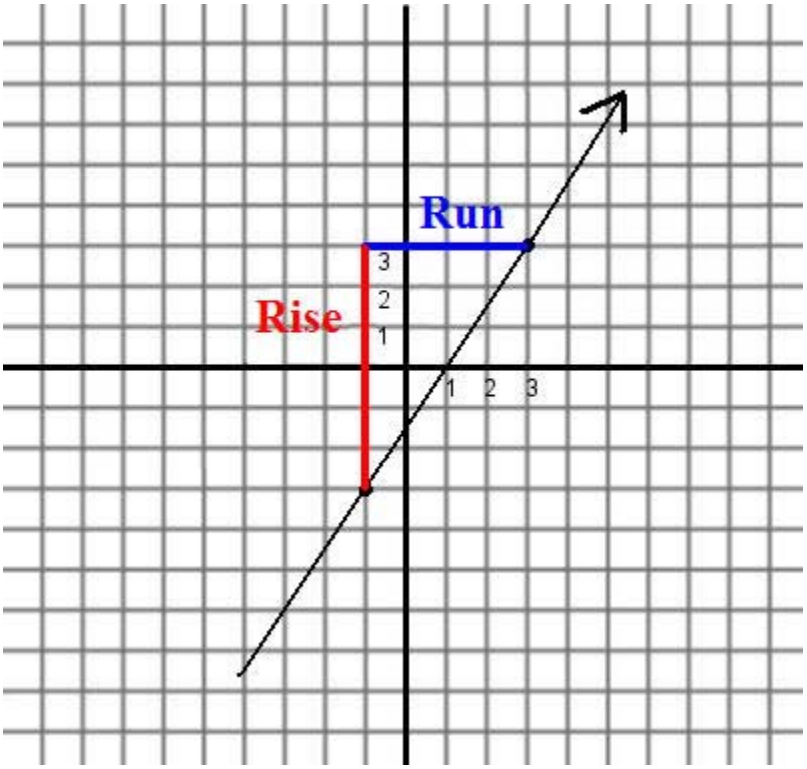
What is the slope of the line that goes through the points (3,3) and (-1, -3)?

Solution:

Let's plot the points on a graph first.



We can calculate the slope from any two points using the rise over the run. Let's use the initial points.



The rise is 6 and the run is 5. So the slope is 6/5.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the slope of the line that goes through the points (2,3) and (-2, -5)?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 2. Type in 2

Comment on this hint

Type your answer below (mathematical expression):

- 2

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25850

Assistment

You are previewing content.
What is the y-intercept of the line that goes through the points (2, 3) and (-2, -5)?

Comment on this question

Request Help

Type your answer below (mathematical expression):

Submit Answer

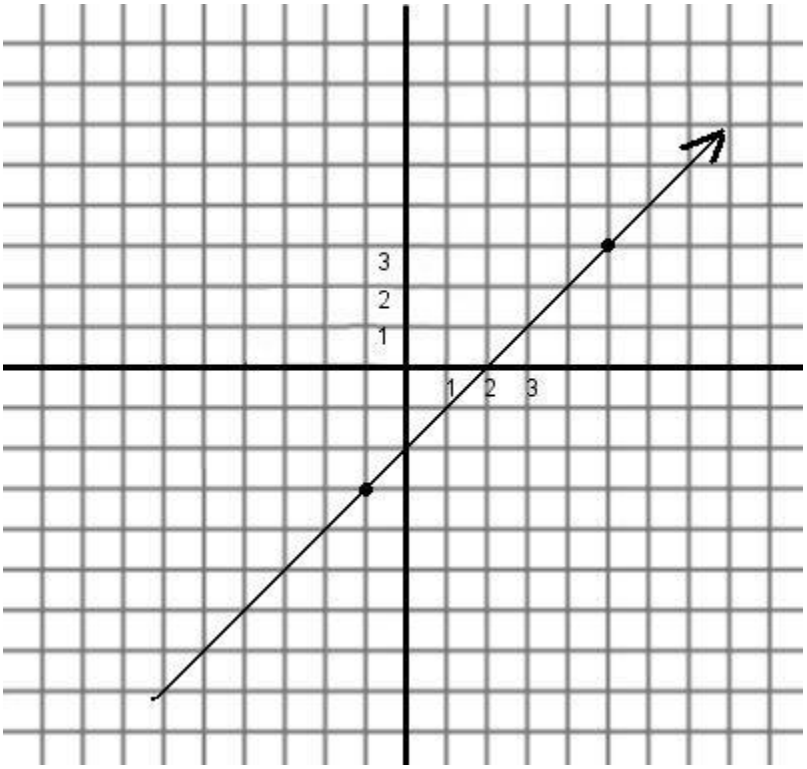
Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

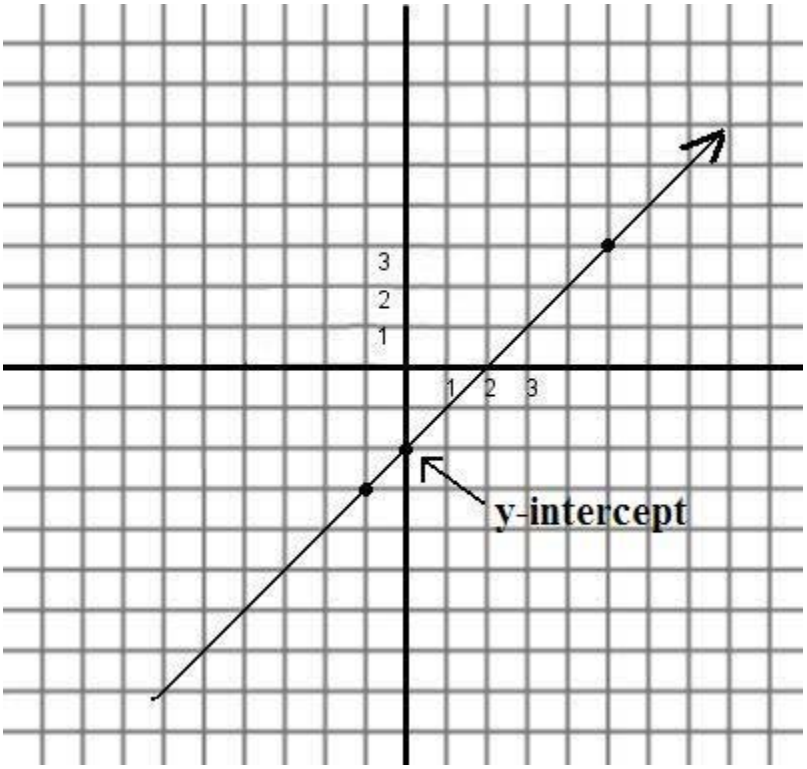
What is the y-intercept of the line that goes through the points (-1, -3) and (5, 3)?

Solution:

Let's plot the points on a graph first.



The y-intercept is the intersection of y-axis and the line



The y-intercept is the value of y when x is 0. Here, it is -2.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the y-intercept of the line that goes through the points (2, 3) and (-2, -5)?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is -1. Type in -1

Comment on this hint

Type your answer below (mathematical expression):

- -1

Submit Answer

Correct!
You are done with this problem!
Comment on this problem

Assistment #25853

Assistment

You are previewing content.
The equation y = b + 1.5x passes through the point (4,7). What is the value of b?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

The equation y = b + 3x passes through the point (-1,5) what is the value of b?

Solution:

Since (-1,5) is on the line, substitute in -1 for the value of x and 5 for the value of y.

Now we solve for b.

$$\begin{aligned} y &= b + 3x \\ 5 &= b + 3*(-1) \\ 5 &= b - 3 \\ 5 + 3 &= b - 3 + 3 \\ 8 &= b \end{aligned}$$

So the value of b is 8.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

The equation y = b + 1.5x passes through the point (4,7) what is the value of b?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 1. Please enter 1

Comment on this hint

Type your answer below (mathematical expression):

- 1

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25869

Assistment

You are previewing content.
Which one of these statements is **not** true for the equation y = -4x + 3?

Comment on this question

Request Help

Select one:

- A. Slope is negative
- B. y-intercept is positive
- C. passes through (4, 19)
- D. passes through (3, -9)

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Which one of these statements is **not** true for the equation y = 2x + 7?

A. y-intercept is positive

B. passes through (2,11)

C. the slope is positive

D. passes through (11,2)

Solution:

Let's check A, B ,C and D and see which one is false.

A. To find the y-intercept we substitute x with 0 and we have:

y = 2x + 7

y = 2*0 + 7

y = 7

So the y-intercept is positive. **A.** is true.

B. We substitute x with 2 and y with 11 to see if they satisfy the equation.

y = 2x + 7

11 = 2*2 + 7

11 = 11

The condition is fulfilled so **B.** is also true.

C. The slope is positive because looking at the general form equation y = mx + b, m shows the slope. In this case, b it's 2.

C. is true.

D. Substituting into the equation x for 11 and y for 2 we get, in the last step:

2 = 28

False! Thus, **D.** is the answer we were looking for.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which one of these statements is **not** true for the equation y = -4x + 3?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is C. Select C. passes through (4,19)

Comment on this hint

Select one:

- A. Slope is negative
- B. y-intercept is positive
- C. passes through (4, 19)
- D. passes through (3, -9)

Submit Answer

Correct!
You are done with this problem!
Comment on this problem

Assistment #25888

Assistment

You are previewing content.
What is the slope of the line that fits the data given?

x	2	3	4	5	6	
y	-4	-5.5	-7	-8.5	-10	

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

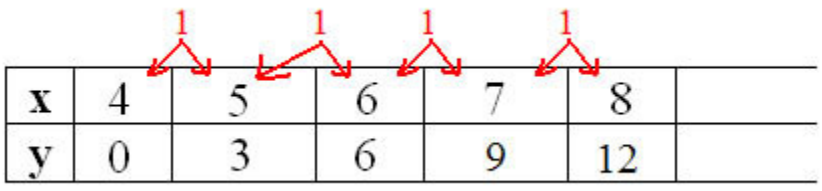
What is the slope of the line that fits the data given?

x	4	5	6	7	8	
y	0	3	6	9	12	

Solution:

The slope can be measured by finding out how much y changes for every change of x by 1.

The table shows values of x changing by 1.



As x increases by 1, y is increases by 3.

x	4	5	6	7	8	
y	0	3	6	9	12	

3 3 3 3

So the slope will be 3.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the slope of the line that fits the data given?

x	2	3	4	5	6	
y	-4	-5.5	-7	-8.5	-10	

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is -1.5. Type in -1.5

Comment on this hint

Type your answer below (mathematical expression):

- -1.5

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25897

Assistment

You are previewing content.
What is the y-intercept of the line that fits the data given?

Earlier, you found that the slope was -1.5.

x	2	3	4	5	6	
y	-4	-5.5	-7	-8.5	-10	

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

What is the y-intercept of the line that fits the data given?

Earlier, you found that the slope was 3.

x	4	5	6	7	8	
y	0	3	6	9	12	

Solution:

Draw the table on your paper and add room for the values of x to go back to zero. Fill in the values of x = 3, x =2, x = 1 and x=0 and the corresponding values of y.

x	0	1	2	3	4	5	6	7	8	
y	-12	-9	-6	-3	0	3	6	9	12	

Since y = -12 when x = 0, the y-intercept is -12.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the y-intercept of the line that fits the data given?

Earlier, you found that the slope was -1.5.

x	2	3	4	5	6	
y	-4	-5.5	-7	-8.5	-10	

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is -1. Type in -1

Comment on this hint

Type your answer below (mathematical expression):

- -1

Submit Answer

Correct!

You are done with this problem!

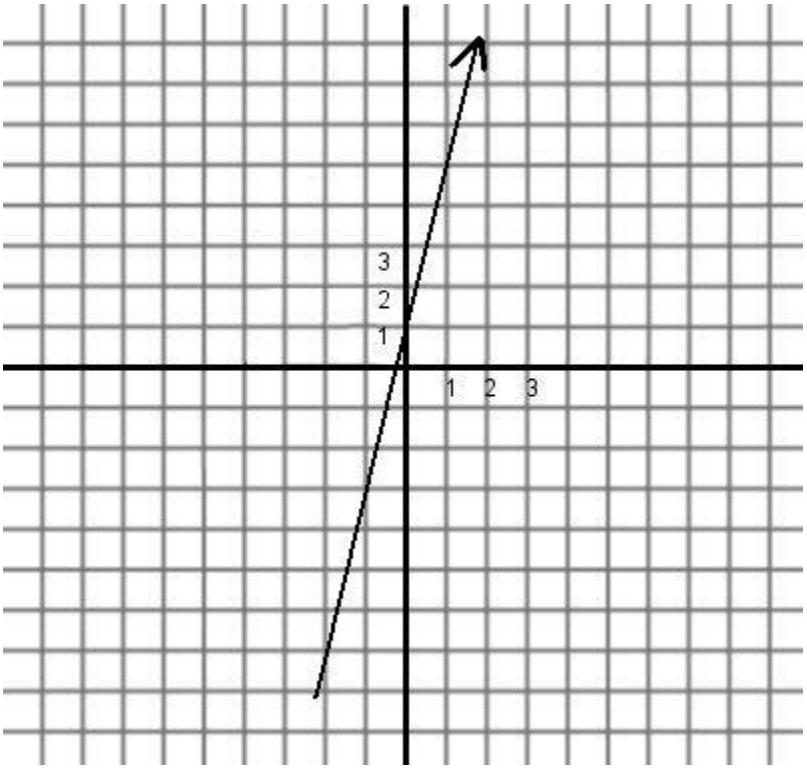
Comment on this problem

Assistment

Assistment #25783

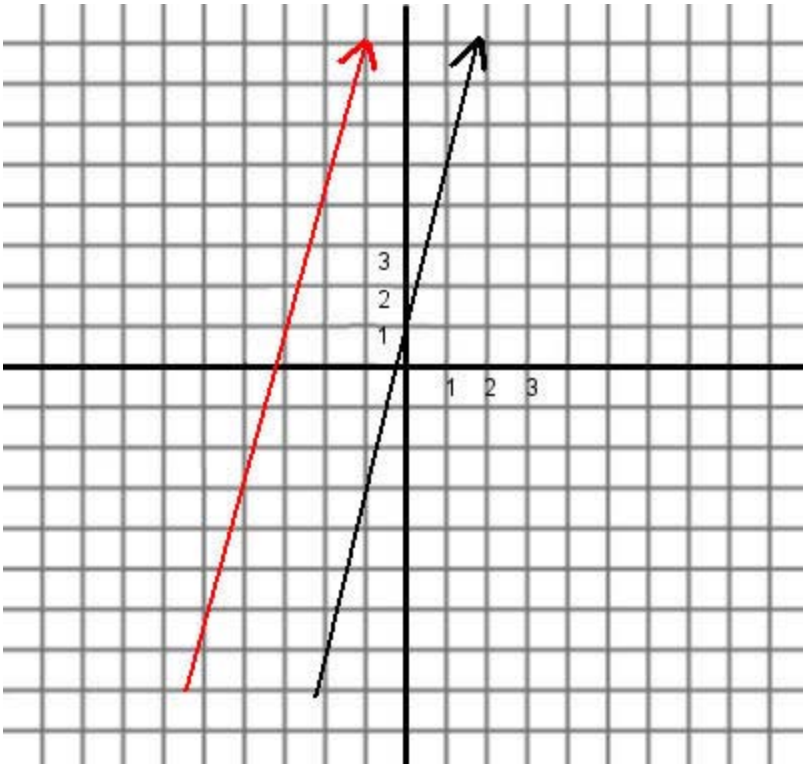
You are previewing content.

What is the slope for a line that is parallel to the line below?



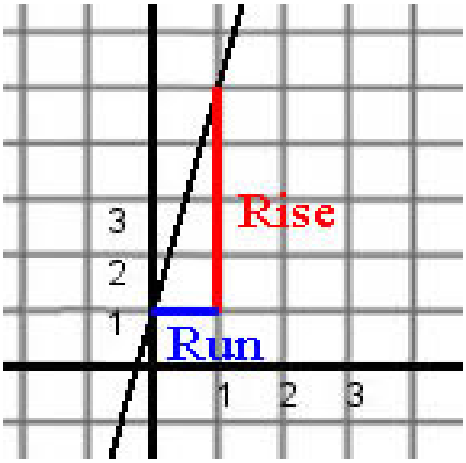
Comment on this question

Lines that are parallel have the same slope. Find the slope of the original line. The graph below shows a line in red that is parallel to the original line. They have the same slope.



Comment on this hint

Remember, the slope can be calculated as the rise over the run.



Comment on this hint

The rise in red is 4 and the run in blue is 1, so the slope of the line is 4/1.

Comment on this hint

Since the slope of our line is 4/1, the slope of any line parallel to it would be the same. Enter 4

Comment on this hint

Type your answer below (mathematical expression):

- 4

Submit Answer

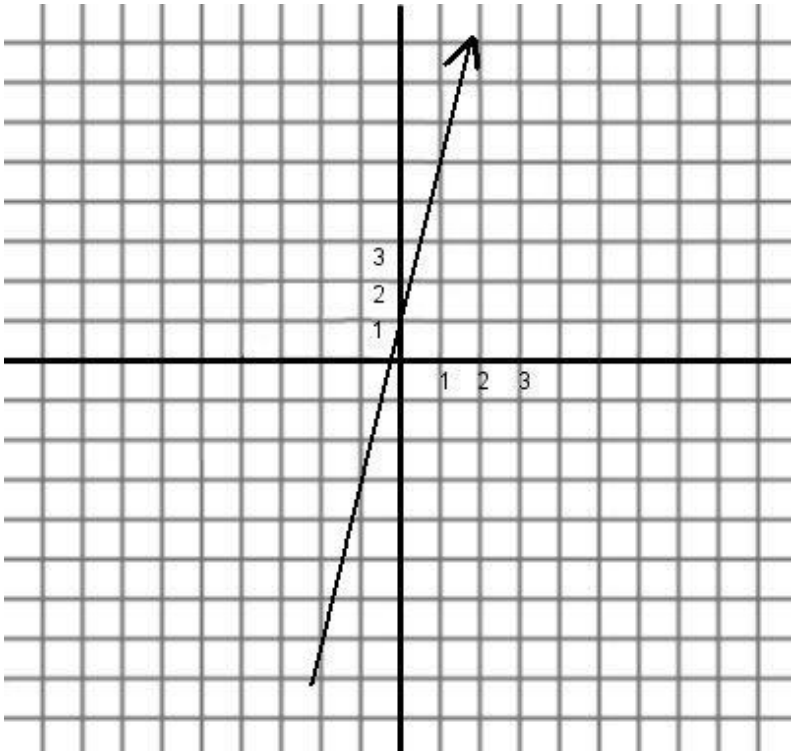
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25844

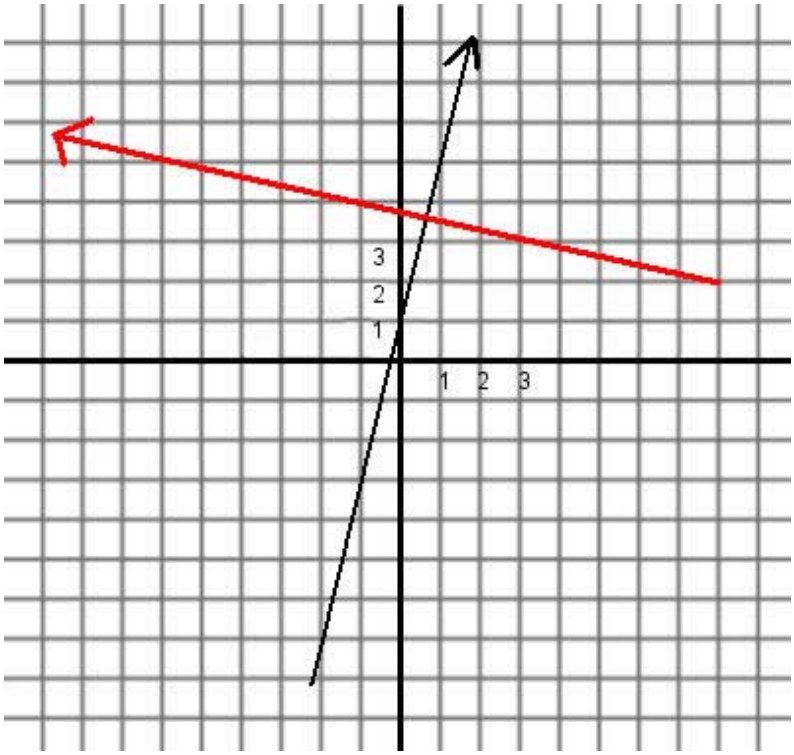
You are previewing content.

What is the slope for a line that is perpendicular to the line below?



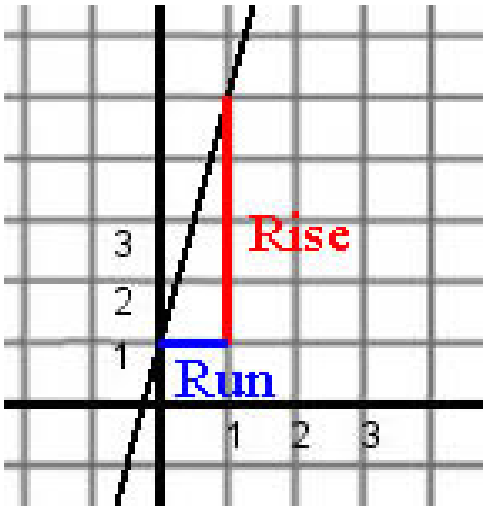
Comment on this question

The slope of a perpendicular line is similar to the slope of the original line. First the rise and run are just reversed and second if the original line slopes up (or have a positive slope, as in this problem) the perpendicular line will slope down (or have a negative slope).



Comment on this hint

First find the slope of the original line. Remember the slope is the rise over the run. Here, the rise is 4 and the run is 1.

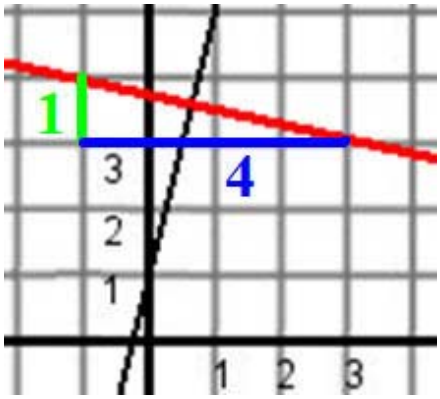


Comment on this hint

So the slope is 4/1. This is the slope of the original line, now find the slope of a perpendicular line.

Comment on this hint

The slope of the perpendicular line is -1/4
since the rise and the run have been reversed. It is also negative since the line is decreasing (or has a negative slope).



Comment on this hint

Therefore the slope of the line is -1/4. Type in -1/4.

Comment on this hint

Type your answer below (mathematical expression):

- -1/4

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25847

Assistment

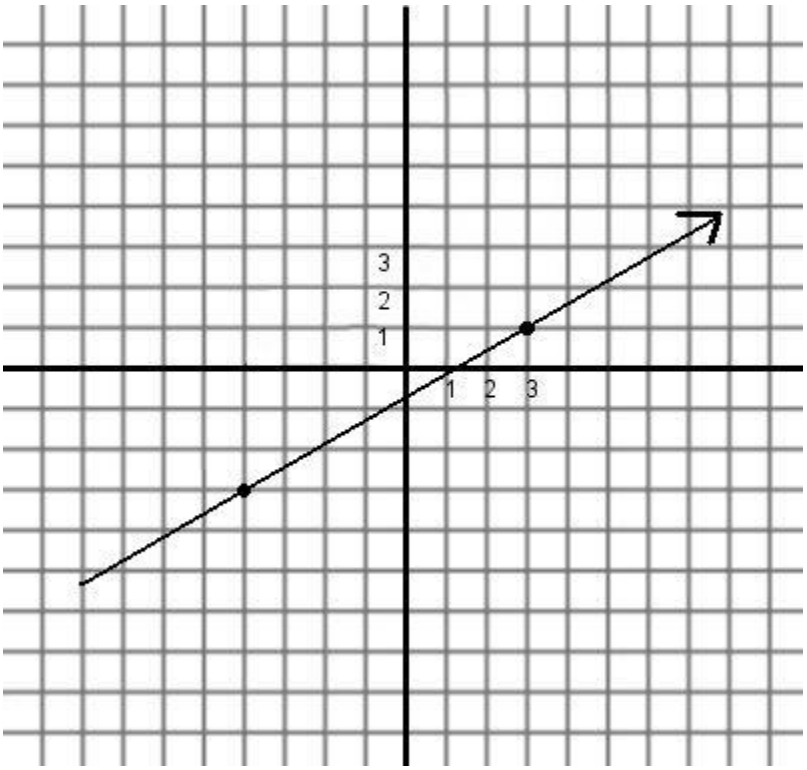
You are previewing content.
What is the slope of the line that goes through the points (-4,-3) and (3, 1)?

Comment on this question

You may want to plot the points on graph paper first.

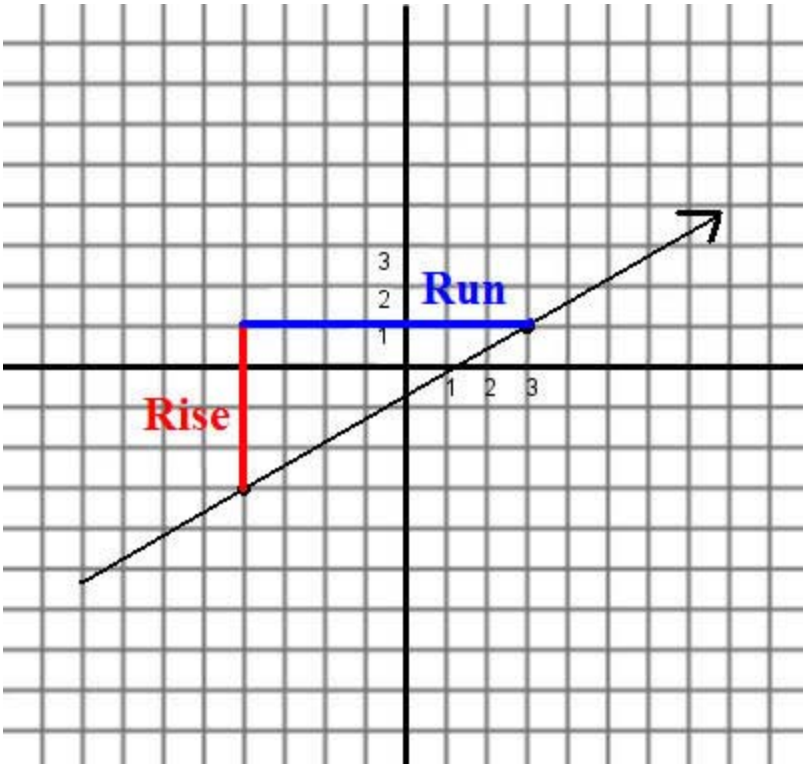
Comment on this hint

The graph is plotted in the image above. Use the definition of the slope.



Comment on this hint

We can calculate the slope from any two points using the rise over the run. Let's use the initial points.



Comment on this hint

The rise is 4 and the run is 7. So the slope is 4/7. Type in 4/7

Comment on this hint

Type your answer below (mathematical expression):

- 4/7

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25851

Assistment

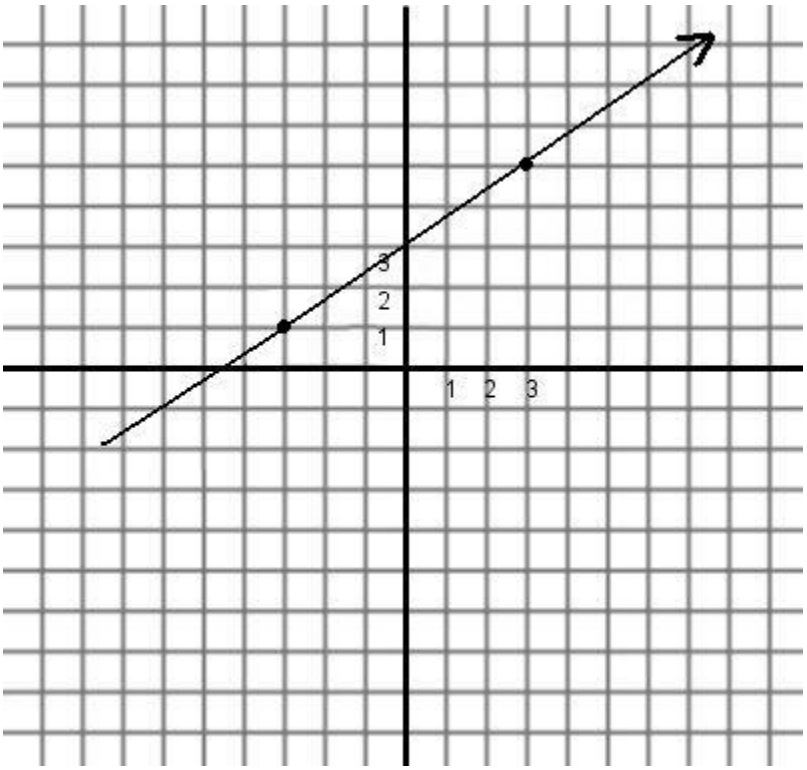
You are previewing content.
What is the y-intercept of the line that goes through the points (-3, 1) and (3, 5)?

Comment on this question

You may want to plot the points on graph paper first.

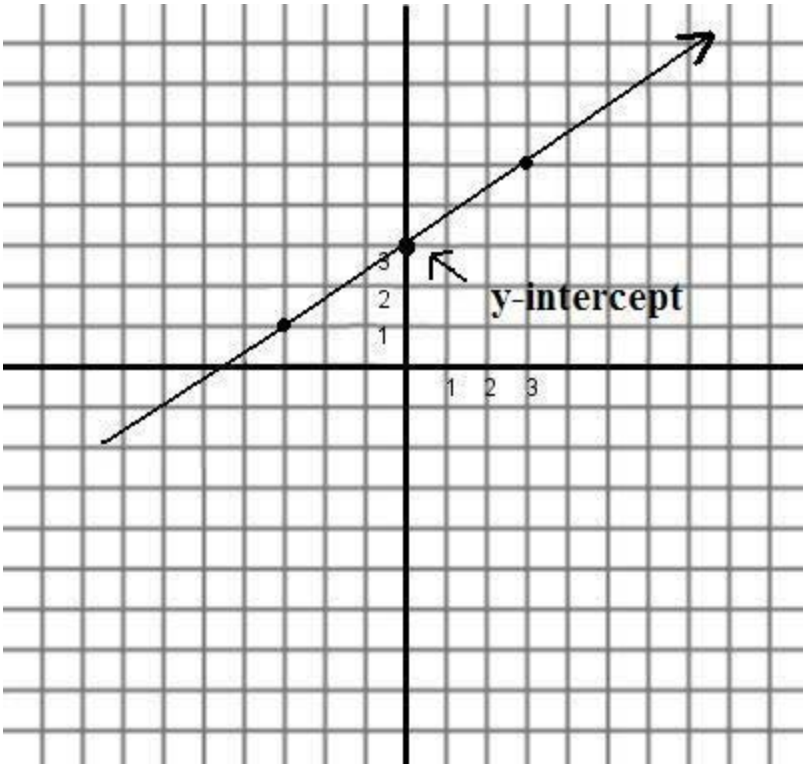
Comment on this hint

Shown below are the plotted points with a line running through them. Where is the y-intercept? The y-intercept is the intersection of y-axis and the line.



Comment on this hint

The y-intercept is pointed out in the picture below.



Comment on this hint

The y-intercept is the value of y when x is 0. Here, it is 3. So enter 3

Comment on this hint

Type your answer below (mathematical expression):

- 3

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25855

Assistment

You are previewing content.
The equation y = b + 0.5x passes through the point (10,7). What is the value of b?

Comment on this question

Since (10,7) is on the line, substitute in 10 for the value of x and 7 for the value of y. Now solve for b.

Comment on this hint

Substitute in as shown.

y = b + 0.5x

7 = b + 0.5*10

Comment on this hint

Check your work against the work below. What is b?

$$
\begin{aligned}
y &= b + 0.5x \\
7 &= b + 0.5*10 \\
7 &= b + 5 \\
7 - 5 &= b + 5 - 5 \\
2 &= b
\end{aligned}
$$

Comment on this hint

The value of b is 2. Type in 2

Comment on this hint

Type your answer below (mathematical expression):

- 2

Submit Answer
Correct!
You are done with this problem!

Comment on this problem

Assistment #25870

Assistment

You are previewing content.
Which one of these statements is **not** true for the equation y = 5x - 1?

Comment on this question

Write A, B, C, and D on your paper then read them and write next to them whether they are true or false. The one that is **not** true is the answer.

Comment on this hint

To verify A, we simply substitute the coordinates 1 for x and 4 for y into the equation and see if there is equality between both sides.
y = 5x - 1

4 = 5 * 1 - 1
4 = 5 - 1
4 = 4

True. We create a list with the results we find:
A. passes through (1, 4) [True]
B. passes through (-2, -11)

C. slope is positive
D. y-intercept is positive

Comment on this hint

The same way we substitute the numbers into the equation for B. (-2 for x and -11 for y)

y = 5x - 1
-11 = 5 * (-2) - 1

-11= -10 - 1
-11 = -11

We update our list accordingly:
A. passes through (1, 4) [True]
B. passes through (-2, -11) [True]

C. slope is positive
D. y-intercept is positive

Comment on this hint

C is true because, as we know from the formula y = m*x+b, where m is the slope. In our example m is 5, so it is positive.

So write C true in the list:

A. passes through (1, 4) [True]
B. passes through (-2, -11) [True]

C. slope is positive [True]
D. y-intercept is positive

Comment on this hint

For D. The y- intercept is when x = 0. So if you substitute in 0 for x you get:

y = 5x - 1

y = 5 * 0 - 1

y = -1

Also the y -intercept is b in the equation y = mx + b. So in the equation y = 5x - 1 the y-intercept is -1.

The result is negative and we can check D false.

A. passes through (1, 4) [True]
B. passes through (-2, -11) [True]

C. slope is positive [True]
D. y-intercept is positive [False]

Comment on this hint

The correct answer is D, which is the false statement we we're looking for.

Comment on this hint

Select one:

- A. passes through (1, 4)
- B. passes through (-2, -11)
- C. slope is positive
- D. y-intercept is positive

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25889

Assistment

You are previewing content.

What is the slope of the line that fits the data given?

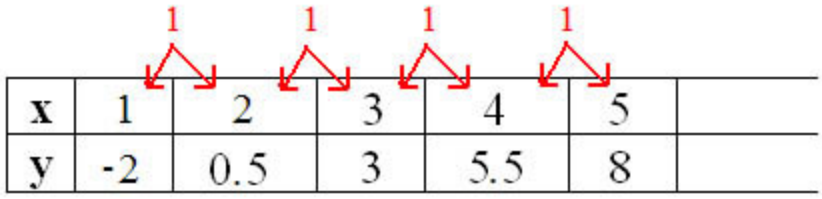
x	1	2	3	4	5	
y	-2	0.5	3	5.5	8	

Comment on this question

The slope can be measured by finding out how much y changes for every change of x by 1.

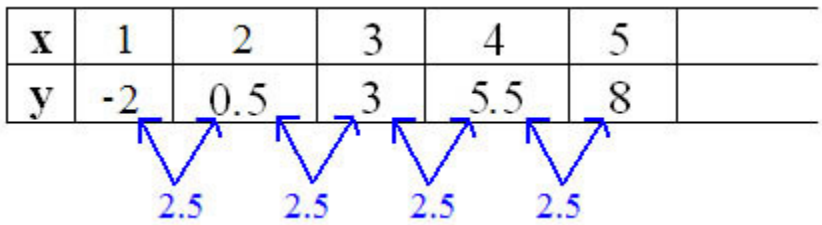
Comment on this hint

The table shows values of x changing by 1. How much does y change each time the x value changes by 1? This will be the slope.



Comment on this hint

As x increases by 1, y is increasing by 2.5. So the slope will be 2.5.



Comment on this hint

Type your answer below (mathematical expression):

- 2.5

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25898

Assistment

You are previewing content.

What is the y-intercept of the line that fits the data given?

Earlier, you found that the slope was 2.5.

x	1	2	3	4	5	
y	-2	0.5	3	5.5	8	

Comment on this question

Draw the table on your paper and add room for the values of x to go back to zero. Fill in the values of x= 1 and x=0 and the corresponding values of y. What is the value of y when x is 0?

Comment on this hint

The filled-in table is shown below. What is the y-intercept?

x	0	1	2	3	4	5	
y	-4.5	-2	0.5	3	5.5	8	

Comment on this hint

Since y = -4.5 when x = 0, the y-intercept is -4.5. Enter -4.5.

Comment on this hint

Type your answer below (mathematical expression):

- -4.5

Submit Answer

Correct!

You are done with this problem!

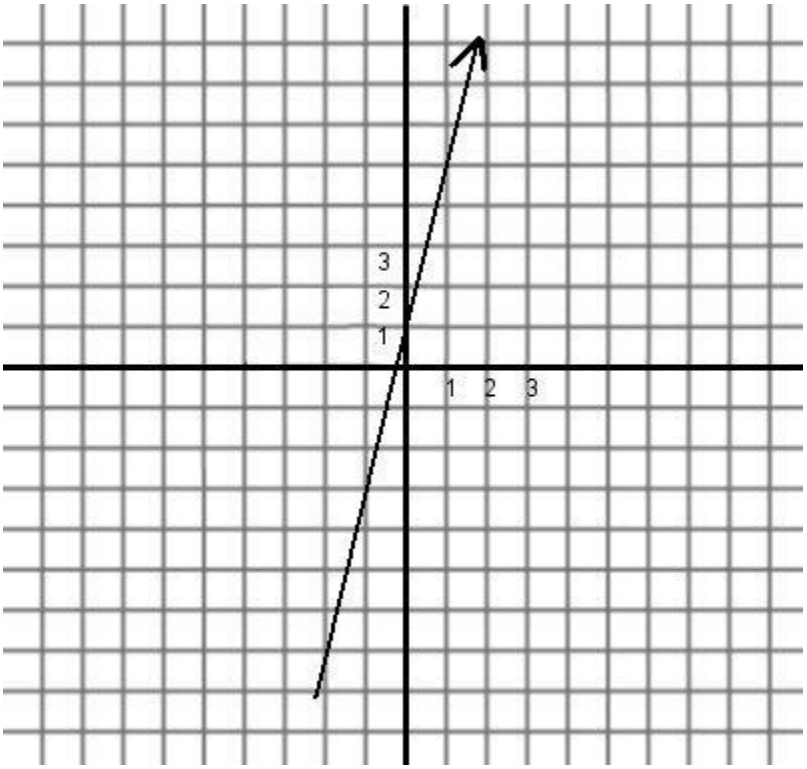
Comment on this problem

Assistment

Assistment #25784

You are previewing content.

What is the slope for a line that is parallel to the line below?



Comment on this question

Request Help

Type your answer below (mathematical expression):

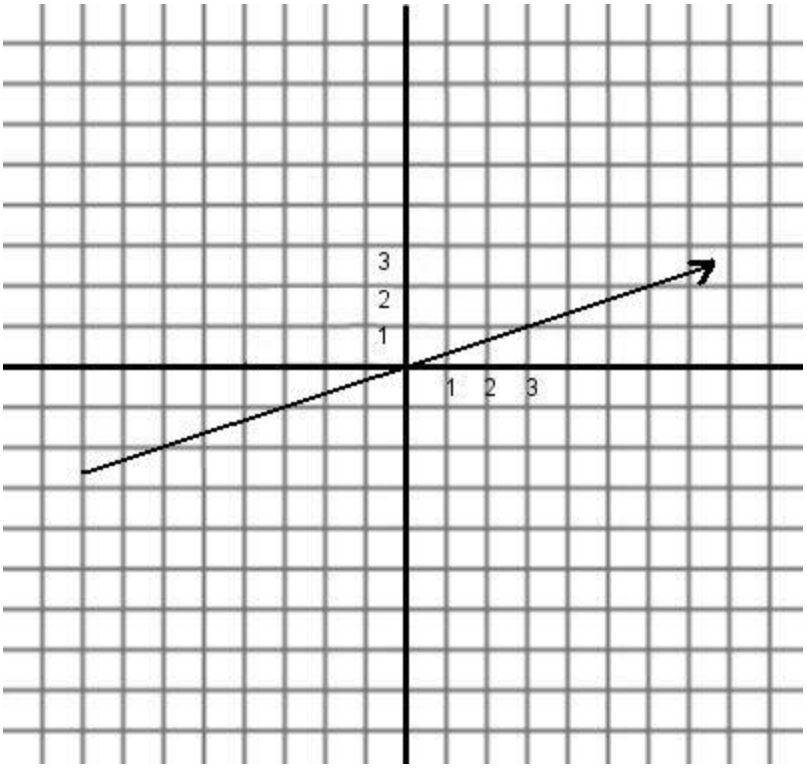
-

Submit Answer

Let's move on and figure out this problem

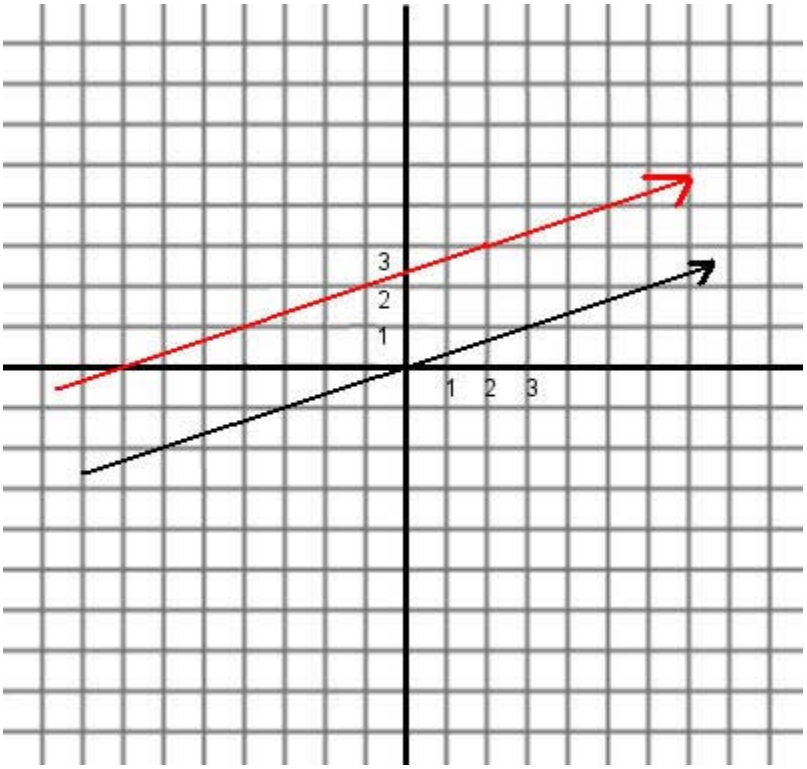
Let's look at the solution for a problem similar to the one in the red box above:

What is the slope for a line that is parallel to the line below?

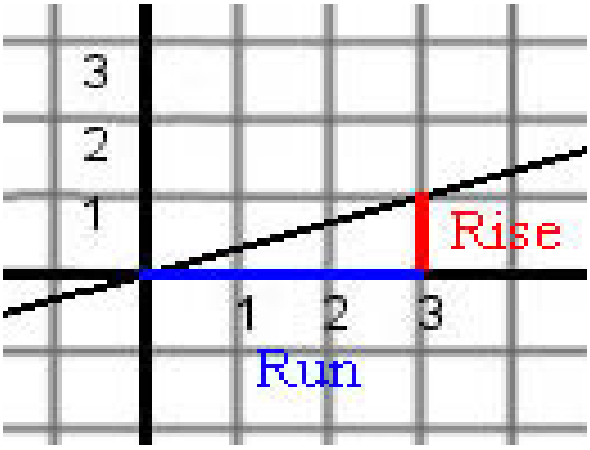


Solution:

Lines that are parallel have the same slope. Find the slope of the original line. The graph below shows a line in red that is parallel to the original line. They have the same slope.



Remember, the slope can be calculated as the rise over the run.



The rise is 1 and the run is 3, so the slope of the line is 1/3.

Since the slope of our line is 1/3, the slope of any line parallel to it would be the same.

Comment on this question

Select one:

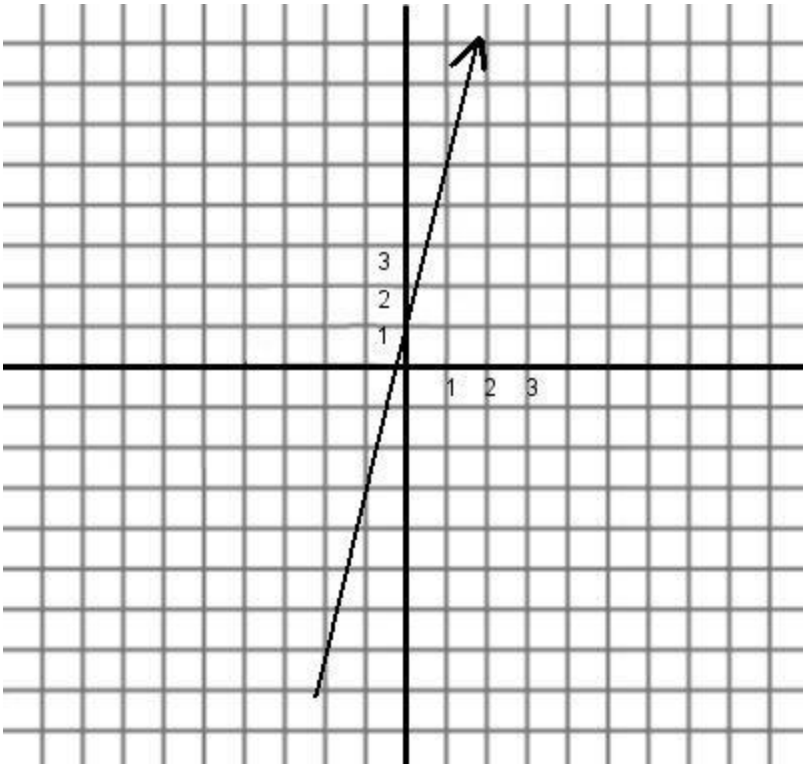
- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the slope for a line that is parallel to the line below?



Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 4. Type in 4.

Comment on this hint

Type your answer below (mathematical expression):

- 4

Submit Answer

Correct!

You are done with this problem!

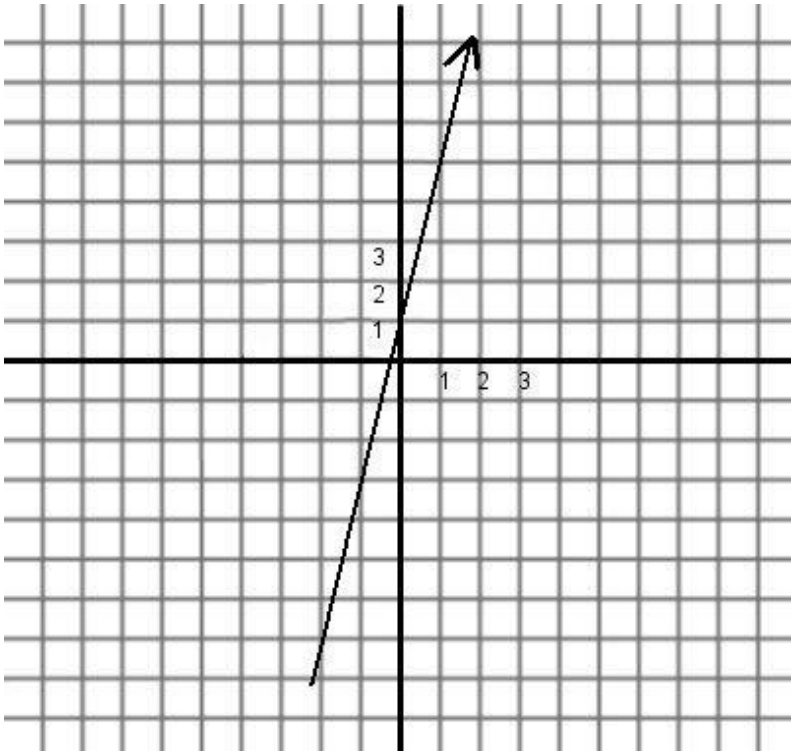
Comment on this problem

Assistment #25845

Assistment

You are previewing content.

What is the slope for a line that is perpendicular to the line below?



Comment on this question

Request Help

Type your answer below (mathematical expression):

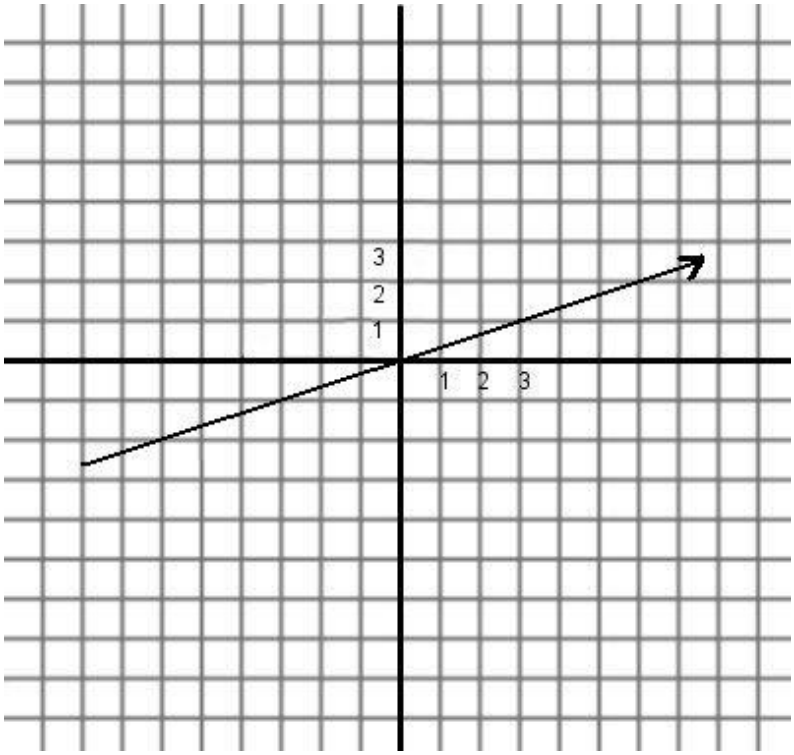
-

Submit Answer

Let's move on and figure out this problem

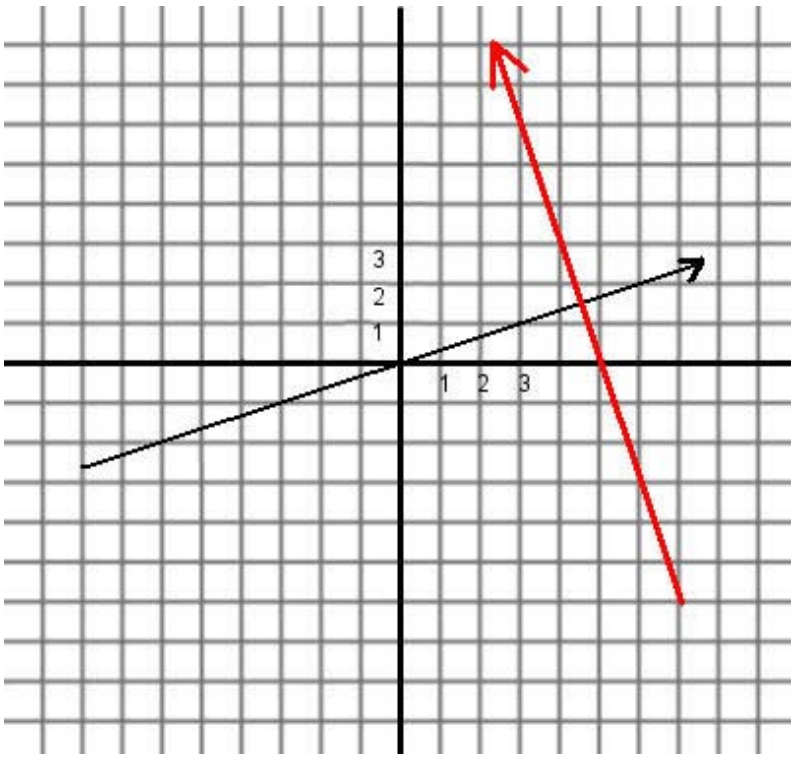
Let's look at the solution for a problem similar to the one in the red box above:

What is the slope for a line that is perpendicular to the line below?

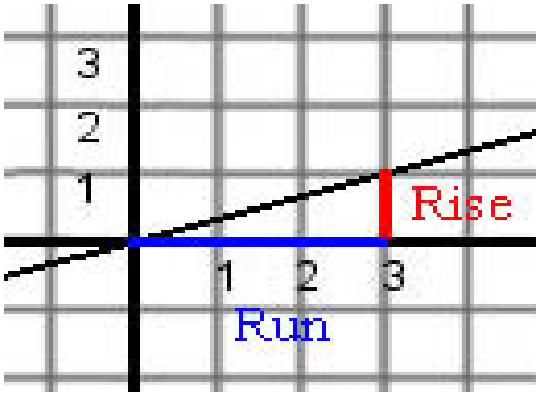


Solution:

The slope of a perpendicular line is similar to the slope of the original line. First the rise and run are just reversed and second if the original line slopes up (or have a positive slope, as in this problem) the perpendicular line will slope down (or have a negative slope).

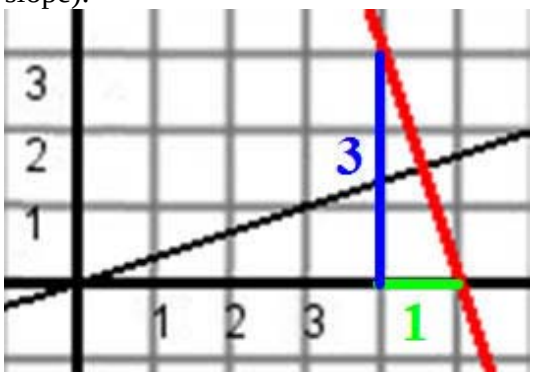


The slope is the rise over the run. Here, the rise is 1 and the run is 3.



So the slope is 1/3. This is the slope of the original line.

The slope of the perpendicular line is -3/1
since the rise and the run have been reversed. It is also negative since the line is decreasing (or has a negative slope).



Comment on this question

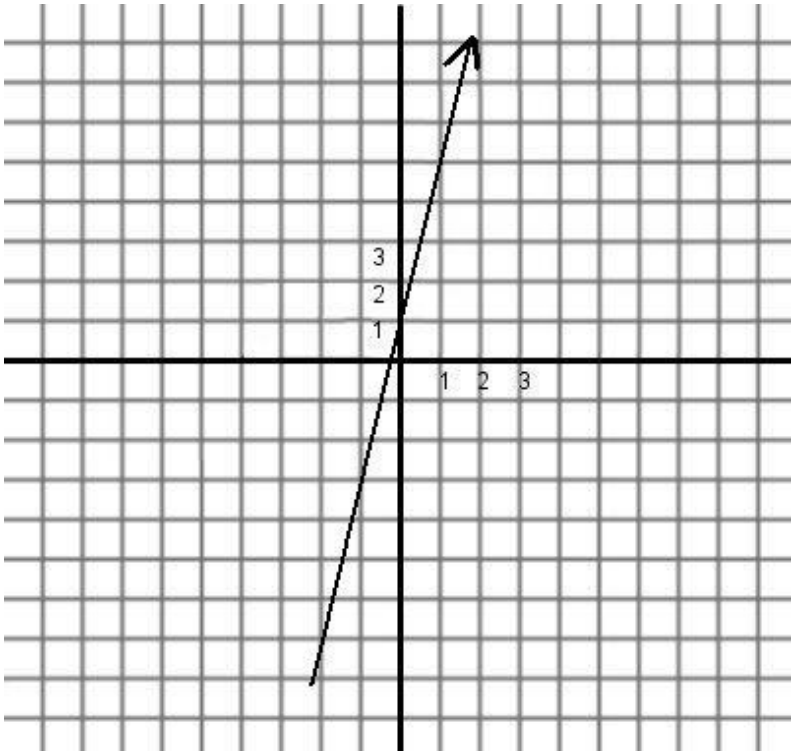
Select one:

- I have read the example and now I am ready to try again.

Submit Answer
Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the slope for a line that is perpendicular to the line below?



Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is -1/4. Type in -1/4

Comment on this hint

Type your answer below (mathematical expression):

- -1/4

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25849

Assistment

You are previewing content.
What is the slope of the line that goes through the points (-4,-3) and (3, 1)?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

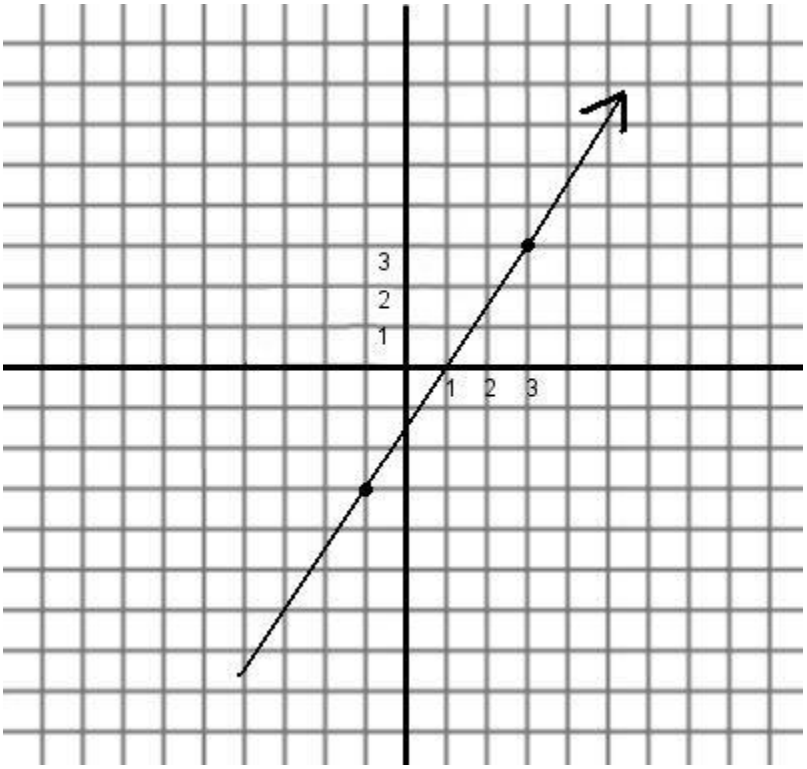
Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

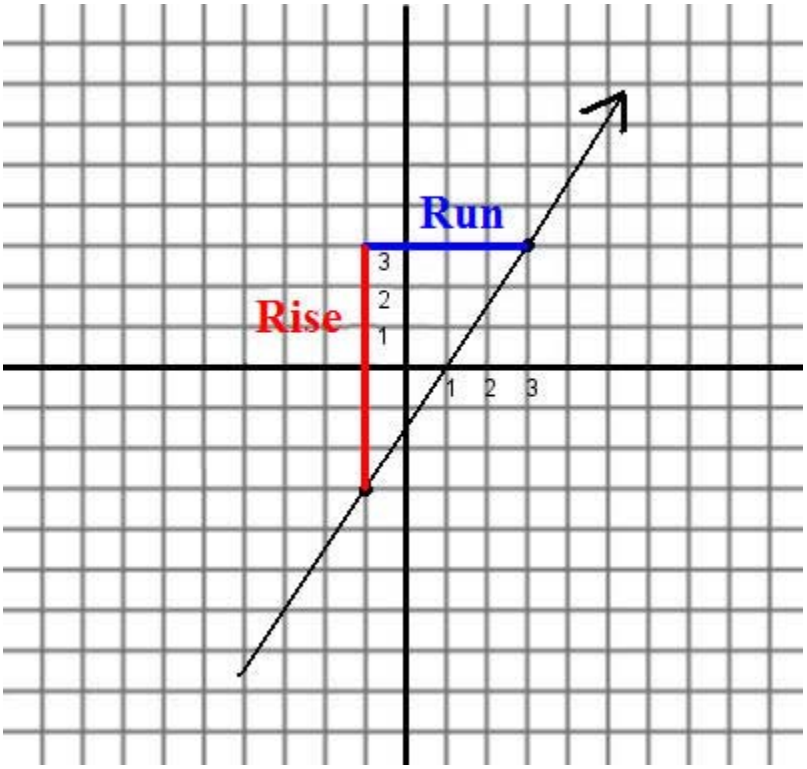
What is the slope of the line that goes through the points (3,3) and (-1, -3)?

Solution:

Let's plot the points on a graph first.



We can calculate the slope from any two points using the rise over the run. Let's use the initial points.



The rise is 6 and the run is 5. So the slope is 6/5.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the slope of the line that goes through the points (-4,-3) and (3, 1)?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 4/7. Type in 4/7

Comment on this hint

Type your answer below (mathematical expression):

- 4/7

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25852

Assistment

You are previewing content.
What is the y-intercept of the line that goes through the points (-3, 1) and (3, 5)?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

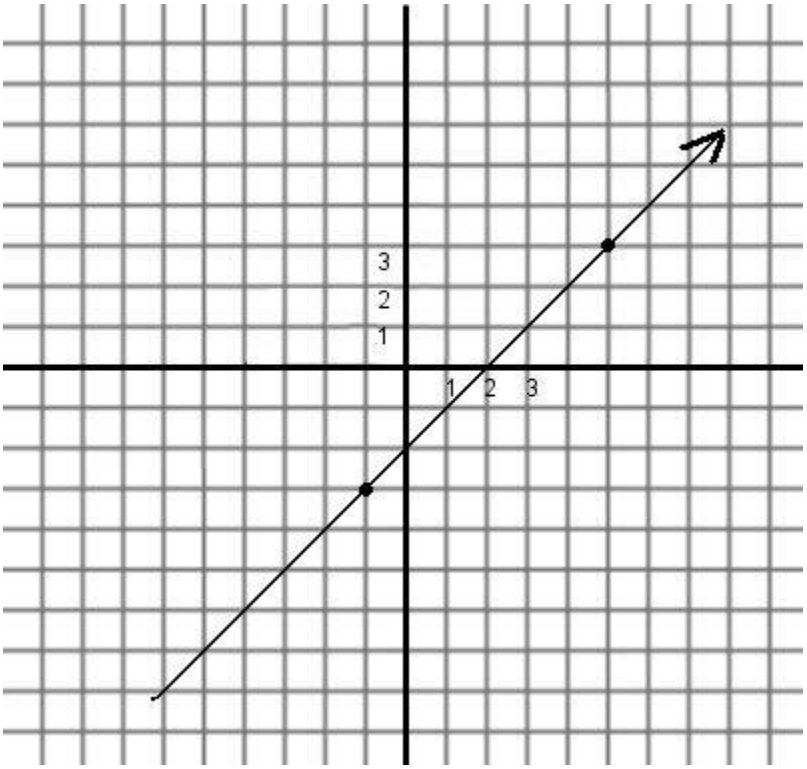
Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

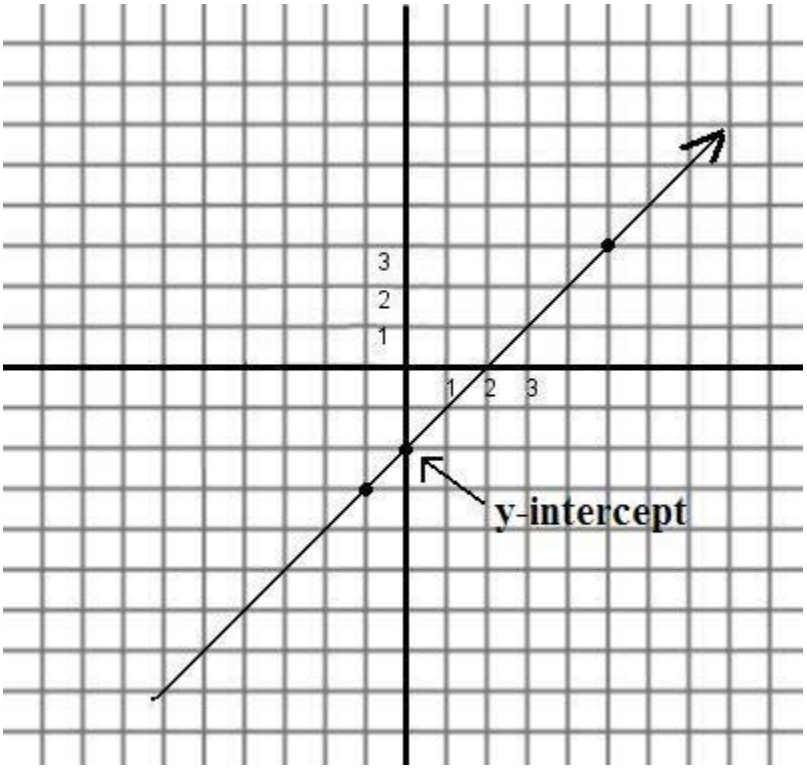
What is the y-intercept of the line that goes through the points (-1, -3) and (5, 3)?

Solution:

Let's plot the points on a graph first.



The y-intercept is the intersection of y-axis and the line



The y-intercept is the value of y when x is 0. Here, it is -2.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the y-intercept of the line that goes through the points (-3, 1) and (3, 5)?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 3. Type in 3

Comment on this hint

Type your answer below (mathematical expression):

- 3

Submit Answer

Correct!
You are done with this problem!
Comment on this problem

Assistment #25856

Assistment

You are previewing content.
The equation y = b + 0.5x passes through the point (10,7). What is the value of b?

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

The equation y = b + 3x passes through the point (-1,5) what is the value of b?

Solution:

Since (-1,5) is on the line, substitute in -1 for the value of x and 5 for the value of y.

Now we solve for b.

```
  y   =   b + 3x
  5   = b + 3*(-1)
  5   =    b - 3
5 + 3 =   b - 3 + 3
  8   =    b
```

So the value of b is 8.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

The equation y = b + 0.5x passes through the point (10,7). What is the value of b?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 2. Type in 2

Comment on this hint

Type your answer below (mathematical expression):

- 2

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25871

Assistment

You are previewing content.
Which one of these statements is **not** true for the equation y = 5x - 1?

Comment on this question

Request Help

Select one:

- A. passes through (1, 4)
- B. passes through (-2, -11)
- C. slope is positive
- D. y-intercept is positive

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

Which one of these statements is **not** true for the equation y = 2x + 7?

A. y-intercept is positive

B. passes through (2,11)

C. the slope is positive

D. passes through (11,2)

Solution:

Let's check A, B ,C and D and see which one is false.

A. To find the y-intercept we substitute x with 0 and we have:

y = 2x + 7

y = 2*0 + 7

y = 7

So the y-intercept is positive. **A.** is true.

B. We substitute x with 2 and y with 11 to see if they satisfy the equation.

y = 2x + 7

11 = 2*2 + 7

11 = 11

The condition is fulfilled so **B.** is also true.

C. The slope is positive because looking at the general form equation y = mx + b, m shows the slope. In this case, m it's 2.

C. is true.

D. Substituting into the equation x for 11 and y for 2 we get, in the last step:

2 = 28

False! Thus, **D.** is the answer we were looking for.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

Which one of these statements is **not** true for the equation y = 5x - 1?

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is D. Select D. y-intercept is positive

Comment on this hint

Select one:

- A. passes through (1, 4)
- B. passes through (-2, -11)
- C. slope is positive
- D. y-intercept is positive

Submit Answer

Correct!
You are done with this problem!
Comment on this problem

Assistment #25896

Assistment

You are previewing content.

What is the slope of the line that fits the data given?

x	1	2	3	4	5	
y	-2	0.5	3	5.5	8	

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

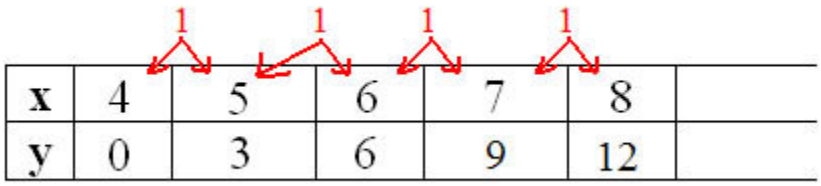
What is the slope of the line that fits the data given?

x	4	5	6	7	8	
y	0	3	6	9	12	

Solution:

The slope can be measured by finding out how much y changes for every change of x by 1.

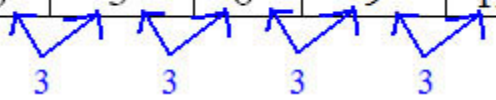
The table shows values of x changing by 1.



x	4	5	6	7	8	
y	0	3	6	9	12	

As x increases by 1, y is increases by 3.

x	4	5	6	7	8	
y	0	3	6	9	12	



So the slope will be 3.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the slope of the line that fits the data given?

x	1	2	3	4	5	
y	-2	0.5	3	5.5	8	

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is 2.5. Type in 2.5

Comment on this hint

Type your answer below (mathematical expression):

- 2.5

Submit Answer

Correct!
You are done with this problem!
Comment on this problem

Assistment #25899

Assistment

You are previewing content.

What is the y-intercept of the line that fits the data given?

Earlier, you found that the slope was 2.5.

x	1	2	3	4	5	
y	-2	0.5	3	5.5	8	

Comment on this question

Request Help

Type your answer below (mathematical expression):

-

Submit Answer

Let's move on and figure out this problem

Let's look at the solution for a problem similar to the one in the red box above:

What is the y-intercept of the line that fits the data given?

Earlier, you found that the slope was 3.

x	4	5	6	7	8	
y	0	3	6	9	12	

Solution:

Draw the table on your paper and add room for the values of x to go back to zero. Fill in the values of x = 3, x =2, x = 1 and x=0 and the corresponding values of y.

x	0	1	2	3	4	5	6	7	8	
y	-12	-9	-6	-3	0	3	6	9	12	

Since y = -12 when x = 0, the y-intercept is -12.

Comment on this question

Select one:

- I have read the example and now I am ready to try again.

Submit Answer

Correct!

Now try the original problem again. You may look back at the worked example if that helps you.

What is the y-intercept of the line that fits the data given?

Earlier, you found that the slope was 2.5.

x	1	2	3	4	5	
y	-2	0.5	3	5.5	8	

Do your best; if you cannot get the answer select hint to get the answer so you can go on.

Comment on this question

The correct answer is -4.5. Type in -4.5

Comment on this hint

Type your answer below (mathematical expression):

- -4.5

Submit Answer

Correct!

You are done with this problem!

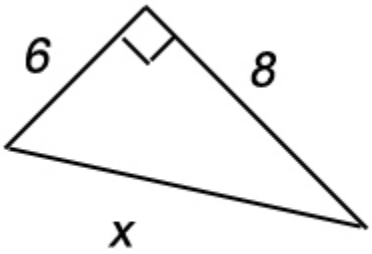
Comment on this problem

Assistment #13984

Assistment

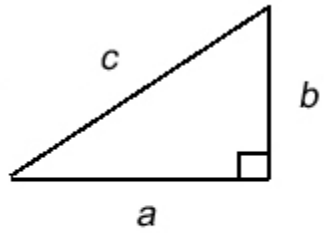
You are previewing content.

What is the length of the hypotenuse of the right triangle shown below?



Comment on this question

The Pythagorean Theorem is shown below. The values of a and b are given as 6 and 8 respectively. Plus in the values of a and b into the Pythagorean Theorem and solve for c.



$a^2 + b^2 = c^2$

Comment on this hint

After plugging in the values of a and b, you get the equation:

$c^2 = 6^2 + 8^2$

Simplify the equation by finding the squares of 6 and 8 and adding them.

Comment on this hint

After simplifying the right hand side of the equation, you get the equation:
$c^2 = 36 + 64$
or
$c^2 = 100$

Take the square root of both sides to find the value of c.

Comment on this hint

$c = \sqrt{100}$

Comment on this hint

The value of c is the $\sqrt{100}$. The square root of 100 is 10. Type in 10.

Comment on this hint

Type your answer below:

- 10

Submit Answer

Correct!

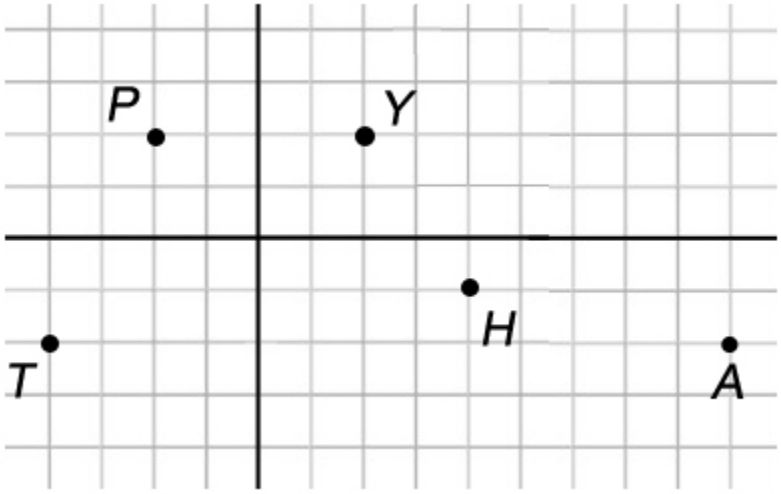
You are done with this problem!

Comment on this problem

Assistment #13985

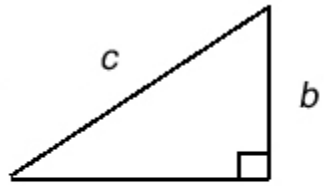
Assistment

You are previewing content.
Which two points have a distance between them of √13?



Comment on this question

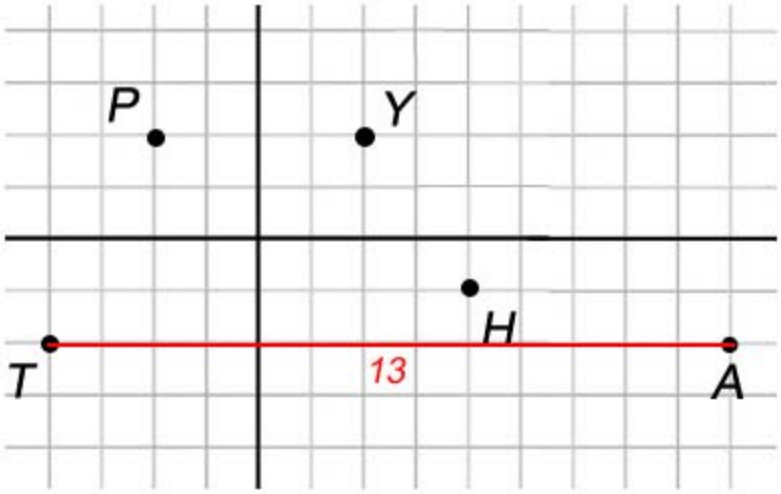
Examine the lengths between each pair provided as an answer choice by using the Pythagorean Theorem shown above.



$a^2 + b^2 = c^2$

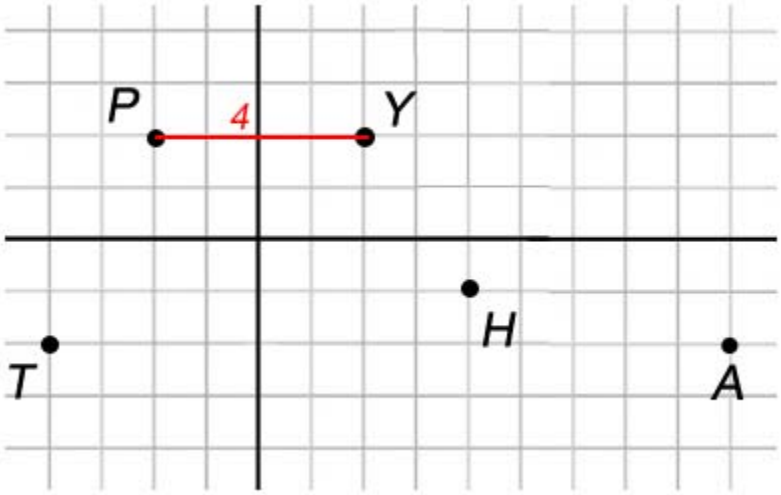
Comment on this hint

The distance between T and A is 13 squares. That is greater than √13. This is not the correct answer choice.



Comment on this hint

The distance between P and Y is 4 squares. Since 4x4 = 16 that is greater than √13.

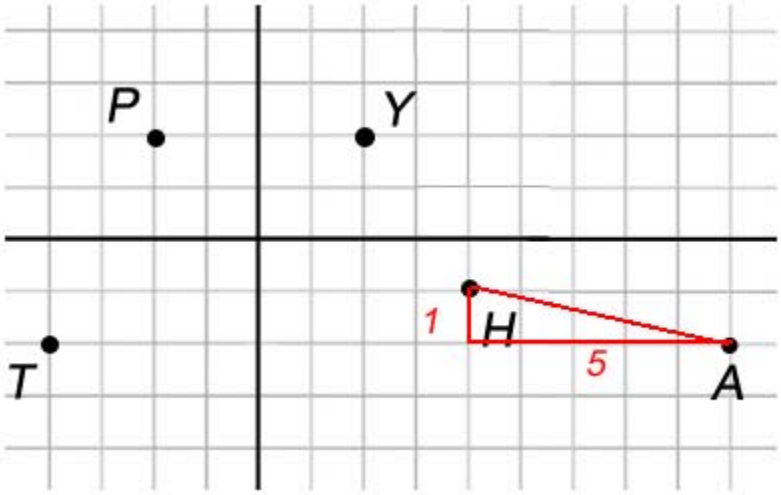


Comment on this hint

The distance between H and A, c, is given by the equation:

$c^2 = 1^2 + 5^2$

Solve for the value of c. Start by simplifying the right hand side.



Comment on this hint

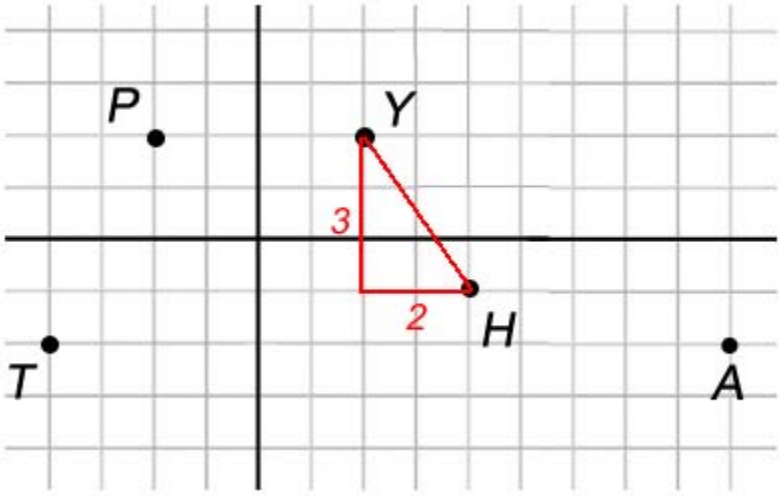
Now that you have simplified the equation to this:

$c^2 = 1 + 25 = 26$

Take the square root of both sides:

$c = \sqrt{26}$
This is greater than $\sqrt{13}$, this is not the correct answer. Try the next answer choice.

Comment on this hint
The distance between Y and H, c, is given by the equation:
$c^2 = 2^2 + 3^2$
Solve for the value of c. Start by simplifying the right hand side.



Comment on this hint

Now that you have simplified the equation to this:
$c^2 = 4 + 9 = 13$

Solving for c by taking the square root of both sides gives you:

$c = \sqrt{13}$
The distance between Y and H is $\sqrt{13}$! This is the correct answer choice! Choose answer choice D (Y and H).

Comment on this hint
Select one:

- A. P and Y
- B. H and A
- C. T and A
- D. Y and H

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

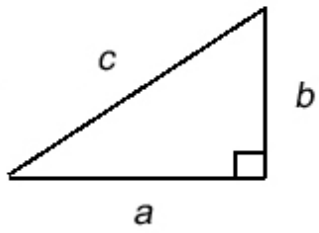
Assistment

Assistment #13986

You are previewing content.
Which set of lengths would make a right triangle?

Comment on this question

Use the Pythagorean Theorem to check each answer choice.



$a^2 + b^2 = c^2$

Comment on this hint

From the first choice: if 5, 10, 15 is a right triangle then the Pythagorean theorem will be true and the sum of the squares of the short sides will equal the square of the long side.

Comment on this hint

Let's see if $5^2 + 10^2 = 15^2$.

Does $25 + 100 = 225$?

$125 \neq 225$

So, this is not a right triangle.

Comment on this hint

Next choice: let's see if $4^2 + 5^2 = 6^2$.

Does $16 + 25 = 36$?

$41 \neq 36$

So, this is not a right triangle either. Go to the next answer choice.

Comment on this hint

Let's see if $3^2 + \sqrt{7}^2 = 4^2$.

Does $9 + 7 = 16$?

$16 = 16$

Yes, it does. Then 3, $\sqrt{7}$ and 4 must be the lenghts of the sides of a right triangle. Choose answer choice **C**.

Comment on this hint

Select one:

- A. 5, 10, 15
- B. 6, 4, 5
- C. 3, 4, 5
- D. 5, $\sqrt{15}$, 3

Submit Answer

Correct!

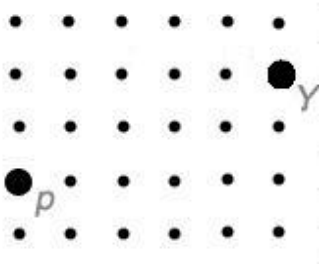
You are done with this problem!

Comment on this problem

Assistment #13989

Assistment

You are previewing content.
Use the pythagorean theorem to find the distance from point P to point Y. What is the distance from point P to point Y?

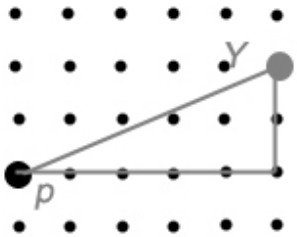


Comment on this question

Start by drawing the line PY and the right triangle it forms.

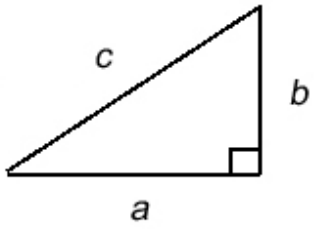
Comment on this hint

Your picture should look like this. Now use the Pythagorean Theorem to find the distance between the two points.



Comment on this hint

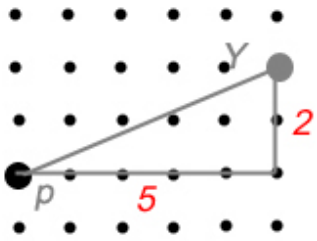
The Pythagorean Theorem is shown below. You need to find the length of the legs in order to use it.



$a^2 + b^2 = c^2$

Comment on this hint

The length of the legs are 2 and 5. Plug the leg lengths into the Pythagorean Theorem and find the length of **c**, the hypotenuse.



Comment on this hint

Plugging in the length of the legs gives you the equation:

$c^2 = 2^2 + 5^2$

Solve for the value of **c**.

Comment on this hint

$c^2 = 2^2 + 5^2$

$c^2 = 4 + 25$
$c^2 = 29$

Find **c** by taking the square root of both sides of the equation.

Comment on this hint

Taking the square root of both sides of the equation gives you the value of c:

$c = \sqrt{29}$.

Choose the answer choice for $\sqrt{29}$.

Comment on this hint
Select one:

- $\sqrt{10}$
- $\sqrt{29}$
- $\sqrt{12}$
- 29

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

Assistment #13990

Assistment

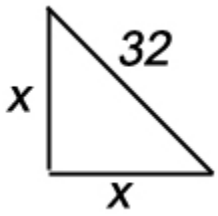
You are previewing content.
The hypotenuse of a right isoceles triangle is 32 feet. How long is one leg of this triangle?

Comment on this question

Start by drawing a picture of this triangle.

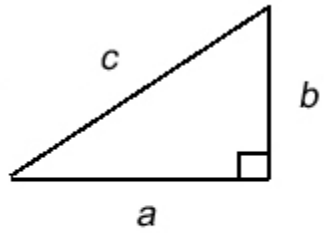
Comment on this hint

The triangle you drew should look like this since it is both a right triangle and a isoceles triangle. An isoceles triangle has two equal sides.



Comment on this hint

Using the pythagorean theorem, find the length of one leg.



$a^2 + b^2 = c^2$

Comment on this hint

Solve for x in this equation:
$32^2 = x^2 + x^2$

Comment on this hint

Simplifying the equation gives you:
$1024 = 2 * x^2$

Comment on this hint

Further simplifying the equation gives you: $x^2 = 1024 / 2 = 512$

Comment on this hint

Taking the square root of both sides gives you:
$x = \sqrt{512}$.
Choose the answer choice $\sqrt{512}$.

Comment on this hint

Select one:

- $\sqrt{512}$
- $\sqrt{64}$
- 4

- 512

Submit Answer

Correct!

You are done with this problem!

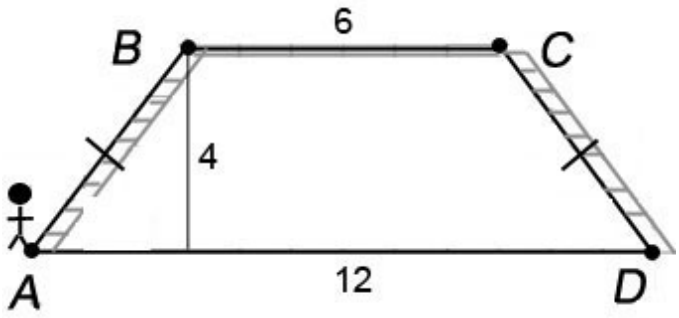
Comment on this problem

Assistment #13991

Assistment

You are previewing content.
A climber at a park looks like the picture below.

If a kid climbs from A to B to C to D, how far has she climbed?

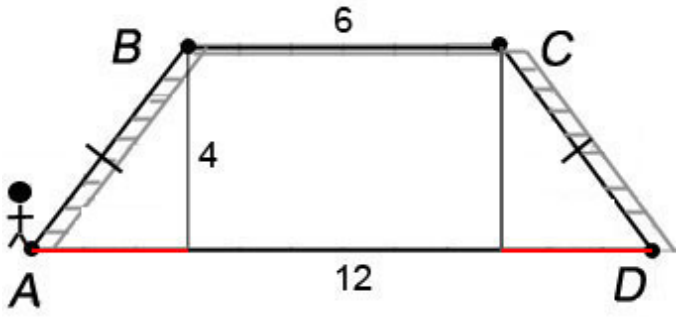


Comment on this question

To find the distance from A to B to C to D, you need to find the length of AB, BC, and CD. The length of BC is given to be 6. You can find the length of AB and CD using the Pythagorean Theorem. First, you must find the length of the unknown leg.

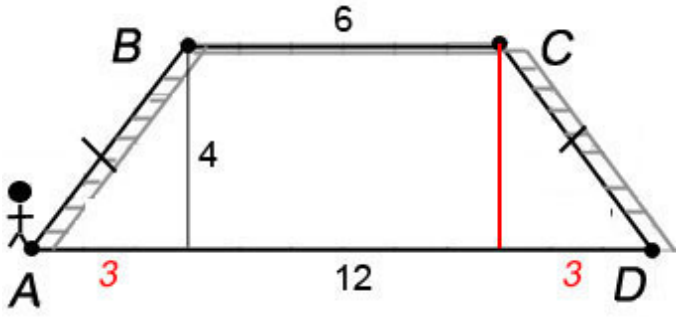
Comment on this hint

The length of the line segments labeled in red are equal to each other because the angles on each end are equal to each other. The sum of the two red line segments can be found by subtracting the top length from the bottom length.



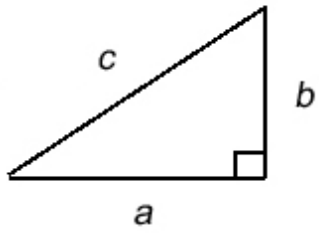
Comment on this hint

If you subtract the top length from the bottom length, you get 6. If the sum of the two equal red segments is 6, then each red segment has a length of 3. Now that you have the length of the unknown, find the length of AB using the pythagorean theorem.



Comment on this hint

Plugging in the length of the legs into the pythagorean theorem gives you the equation:
$c^2 = 3^2 + 4^2$
Solve for c.



$a^2 + b^2 = c^2$

Comment on this hint
Simplifying the equation gives you:
$c^2 = 9 + 16 = 25$
Taking the square root of both sides gives you the value of c:
c = 5.
Now that you have found the length of AB, you need to find the length of CD.
Comment on this hint
The length of CD is the same as AB because the length of the legs of the right triangle it creates is the same as the length of the legs of the right triangle created by AB. Since AB's length is 5, the length of CD is also 5.
Comment on this hint
To find the distance from A to B to C to D, you need to find the sum of the length of AB, BC, and CD.
Comment on this hint
AB + BC + CD = 5 + 6 + 5 = 16. The distance from A to B to C to D is 16. Type in 16.
Comment on this hint
Type your answer below:

- 16

Submit Answer
Correct!
You are done with this problem!
Comment on this problem

Assistment

Assistment #25024

You are previewing content.

Now which of the following is equivalent to the expression below?

5^4

Comment on this question

Request Help

Select one:

- 54
- 5 x 4
- 5 x 5 x 5 x 5
- 4 x 4 x 4 x 4 x 4

Submit Answer

Let's move on and figure out this problem

When raising a number to a power, what basic operation takes place?

Comment on this question

Select one:

- Repeated Addition
- Repeated Subtraction
- Repeated Multiplication
- Repeated Division

Submit Answer

Correct!

Let's do an example:

In the expression 4^3 , 4 is the base that is multiplied by itself. How many times is it multiplied?

Comment on this question

Select one:

- 3 times or 4 x 4 x 4
- 2 times or 4 x 4
- 4 times or 4 x 4 x 4 x 4

Submit Answer

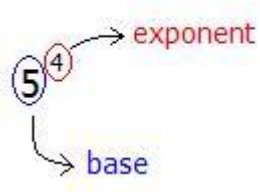
Correct!

Yes, in 4^3, the base 4 is multiplied 3 (the exponent) times.

Now which of the following is equivalent to the expression below?

5^4

Comment on this question



So 5 is the base and 4 is the exponent.

Comment on this hint

The base 5 is multiplied 4 times.

Comment on this hint

The answer is 5 x 5 x 5 x 5. Select this choice.

Comment on this hint

Select one:

- 54
- 5 x 4
- 5 x 5 x 5 x 5
- 4 x 4 x 4 x 4 x 4

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment

Assistment #25022

You are previewing content.

What is the value of the 2 in the number below?

54.625

Comment on this question

Request Help

Select one:

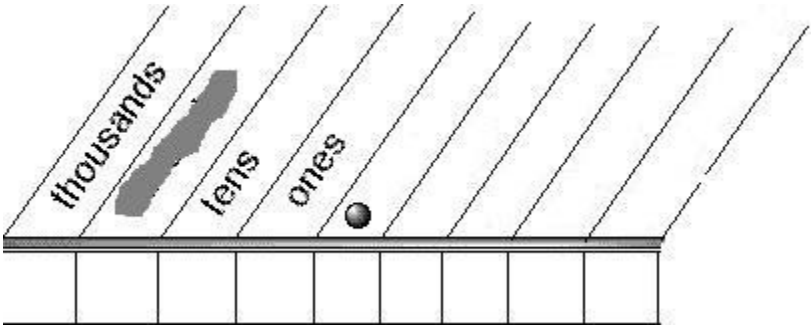
- two hundred
- twenty
- two tenths
- two hundredths

Submit Answer

Let's move on and figure out this problem

First let's make sure you know the names of the place values.

What goes on the left of "tens"?



Comment on this question

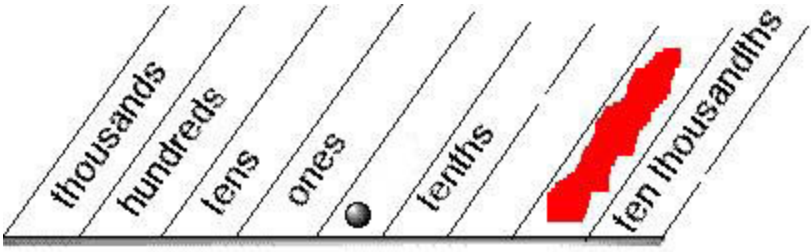
Select one:

- tens
- tenths
- hundreds
- hundredths

Submit Answer

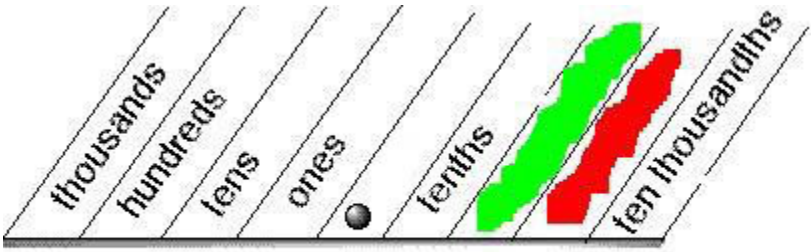
Correct!

Now, what goes into the red box?



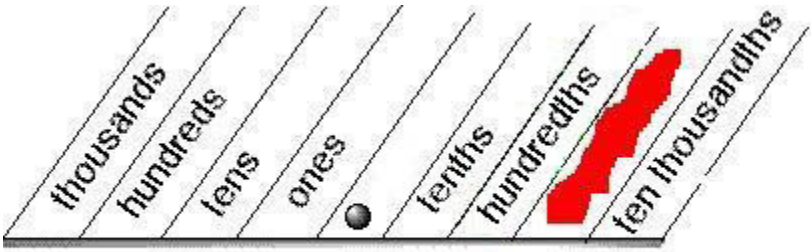
Comment on this question

First of all, what is it in the green space?



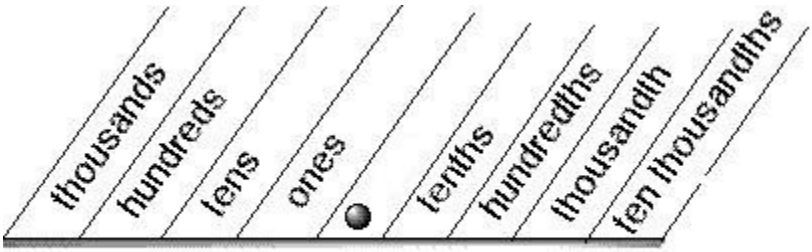
Comment on this hint

The answer is hundredths. So, now what's in the red box?



Comment on this hint

The answer is thousandths.



Comment on this hint

Select one:

- hundredths
- tenths
- thousandths
- hundreds

Submit Answer

Correct!

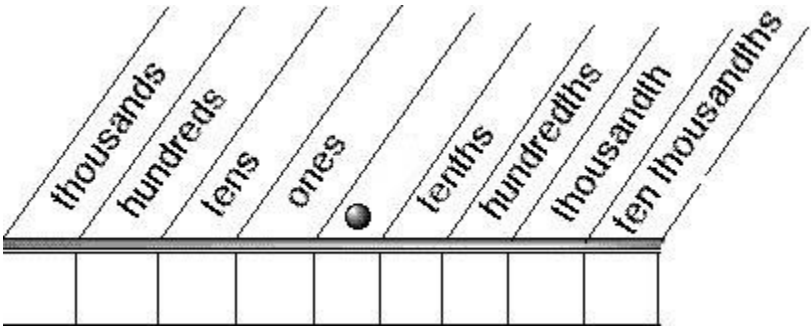
Now let's answer the original question:

What is the value of the 2 in the number below?

54.625

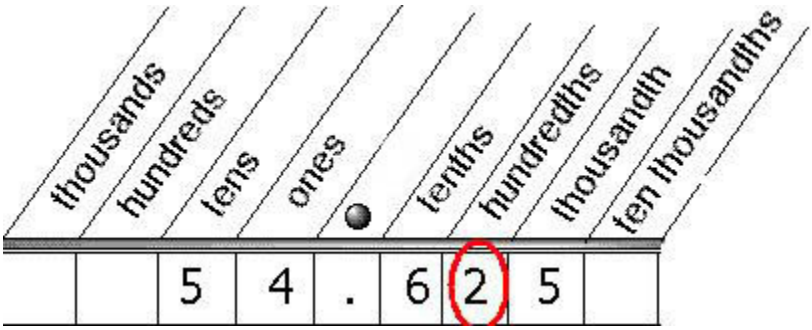
Comment on this question

Let's look at the image below and try to put each number in its rightful place.



Comment on this hint

It would look like this:



Comment on this hint

The value of two is: two hundredths. The correct answer is two hundredths.

Comment on this hint

Select one:

- two hundred
- twenty
- two tenths
- two hundredths

Submit Answer

Correct!

You are done with this problem!

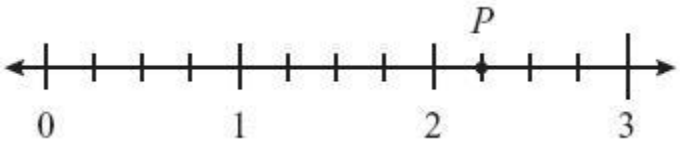
Comment on this problem

Assistment

Assistment #25023

You are previewing content.

What is the location of point P on the number line below?



Comment on this question

Request Help

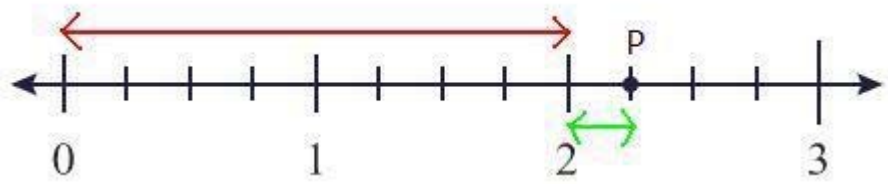
Type your answer below (mathematical expression):

-

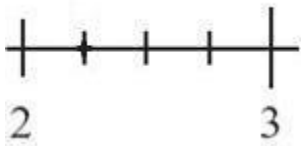
Submit Answer

Let's move on and figure out this problem

If we measure from zero we know we have gone two units. Now we must find the fractional part.

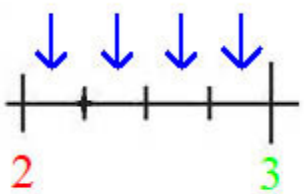


Let's start by finding how many equal pieces are there between 2 and 3?



Comment on this question

Look and count the spaces that are between the smaller lines and the lines where 2 and 3 are.



Comment on this hint

The whole unit is divided into 4 equal spaces. Type in 4

Comment on this hint

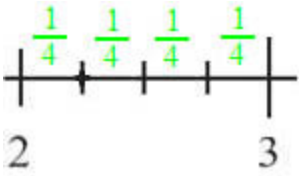
Type your answer below (mathematical expression):

- 4

Submit Answer

Correct!

Now we know the one unit is divided into four pieces we know the distance from the 2 to the dot is 1/4.



Write 1/4 as a decimal.

Comment on this question

Think of a quarter dollar as a 1/4 of a dollar. How many cents are there in one quarter?

Comment on this hint

25 cents are in a quarter dollar. We can write 25 cents = 0.25 dollars.

Comment on this hint

So, 1/4 is the same as 0.25. Type in 0.25.

Comment on this hint

Type your answer below:

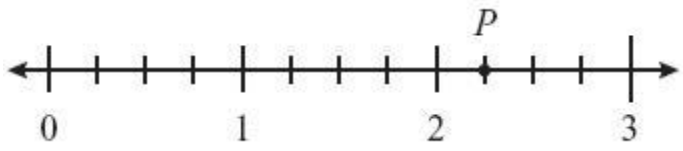
- 0.25

Submit Answer

Correct!

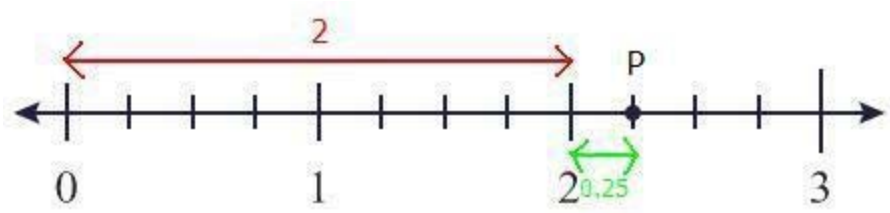
Back to the original problem:

What is the location of point P on the number line below?



Comment on this question

The picture below is what we found in the earlier questions:



Comment on this hint

So, we just add the two line numbers.

2 + 0.25 = 2.25

Comment on this hint

The answer is 2.25. Select 2.25.

Comment on this hint

Type your answer below (mathematical expression):

- 2.25

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25048

Assistment

You are previewing content.
Henry had a piece of rope that was 23 1/2 inches long. Henry cut the rope into two pieces so that one piece was 8 1/4 inches long. What was the length of the other piece of rope?

Comment on this question

Request Help

Select one:

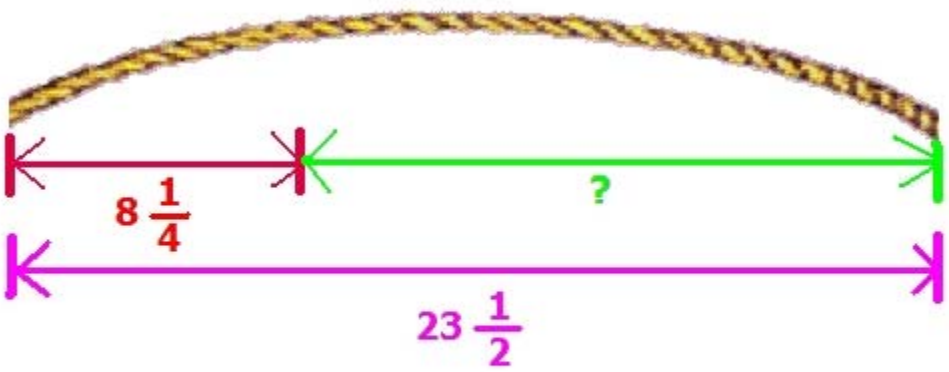
- 15 1/4 inches
- 15 1/2 inches
- 31 1/3 inches
- 31 3/4 inches

Submit Answer

Let's move on and figure out this problem
Will the piece of rope be longer or shorter than 23 1/2?

Comment on this question

Perhaps this picture may help you:



Comment on this hint

The new piece of rope is shorter than 23 1/2.

Comment on this hint

Select one:

- Longer
- Shorter

- Cannot tell

Submit Answer

Correct!

Which expression can be used to find the length of the other piece of rope?

Comment on this question

Select one:

- 23 1/2 + 8 1/4
- 23 1/2 - 8 1/4
- 23 1/2 x 8 1/4
- 23 1/2 ÷ 8 1/4

Submit Answer

The second piece is smaller then the total length. Thus we are talking about a subtraction.

Correct!

Good. Now, back to the original problem:

Henry had a piece of rope that was 23 1/2 inches long. Henry cut the rope into two pieces so that one piece was 8 1/4 inches long. What was the length of the other piece of rope?

Comment on this question

The length of the second piece is equal to the expression you found earlier: 23 1/2 - 8 1/4.

Comment on this hint

Let's setup and solve the subtraction problem.

$$\begin{array}{r} 23\frac{1}{2} \\ -\,8\frac{1}{4} \\ \hline \end{array}$$

Comment on this hint

We first need a common denominator for our fractions.

$$\begin{array}{r} 23\frac{1}{2}=\frac{2}{4} \\ -\,8\frac{1}{4}=\frac{1}{4} \\ \hline \end{array}$$

Comment on this hint

Now you can subtract.

$$\begin{array}{r} 23\frac{1}{2}=\frac{2}{4} \\ -\,8\frac{1}{4}=\frac{1}{4} \\ \hline 15 \quad \frac{1}{4} \end{array}$$

The other length of the rope is equal to 15 1/4 inches. Select 15 1/4 inches

Comment on this hint

Select one:

- 15 1/4 inches
- 15 1/2 inches
- 31 1/3 inches
- 31 3/4 inches

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25049

Assistment

You are previewing content.
Which of the following is equivalent to 6.25?

Comment on this question

Request Help

Select one:

- 6 1/5
- 6 1/4
- 6 2/5
- 6 3/4

Submit Answer

Let's move on and figure out this problem
In order to convert 6.25 to a fraction we first need to write 0.25 as a fraction. Write a fraction equivalent to 0.25.

Comment on this question

To find the fraction equal to 0.25, it may help to think of 0.25 as 25 cents.

Comment on this hint

Here are two ways to find the fraction equal to 0.25

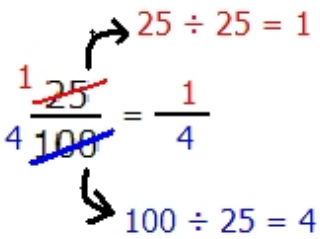
0.25 = 25/100 now simplify

OR

If .25 is 25 cents, we know it is a quarter.

Comment on this hint

After simplification we get:



Comment on this hint

.25 is the same as 25 cents or 1/4 of a dollar.

Comment on this hint

The answer is 1/4. Fill in 1/4.

Comment on this hint

Type your answer below:

- 1/4

Submit Answer

Correct!

Which of the following is equivalent to 6.25?

Comment on this question

We already have 6 from 6.25, so just write .25 as a fraction.

Comment on this hint

From the hints above we found that .25 is the same as 1/4.

Comment on this hint

The correct answer is 6 1/4. Select 6 1/4.

Comment on this hint

Select one:

- 6 1/5
- 6 1/4
- 6 2/5
- 6 3/4

Submit Answer

Correct!

You are done with this problem!

Comment on this problem

Assistment #25050

Assistment

You are previewing content.

What is the value of the expression below?

$$2 + (-5)$$

Comment on this question

Request Help

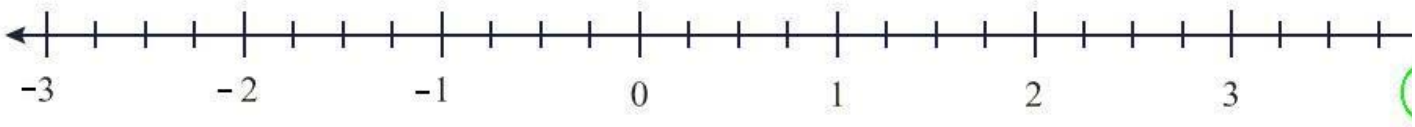
Select one:

- 7
- 3
- - 3
- - 7

Submit Answer

Let's move on and figure out this problem
Let's work on a different problem and then you can try to do the original problem.

Let's solve 4 + (- 7). In this problem we start at 4 and then move 7 spaces. In what direction will we move 7 spaces?



Comment on this question

Start by looking at the plus it means move to the right, but there is more.

Comment on this hint

Since the 7 is negative we move to the left.

Comment on this hint

So, we move to the left.

Comment on this hint

Select one:

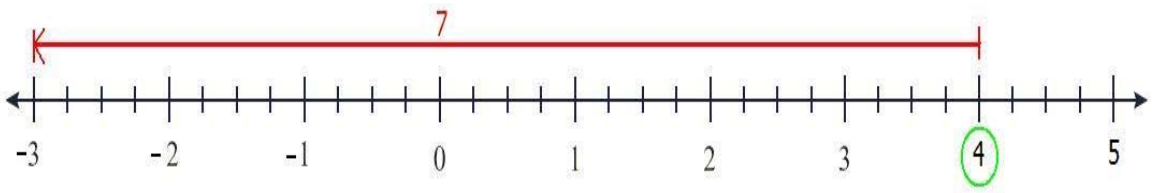
- Left
- Right
- Cannot tell

Submit Answer

Correct!
Now use the number line to find 4 + (- 7).

Comment on this question

We draw a line to the left 7 units.



Comment on this hint
It stops at - 3. This is the result. Type in -3.
Comment on this hint
Type your answer below:

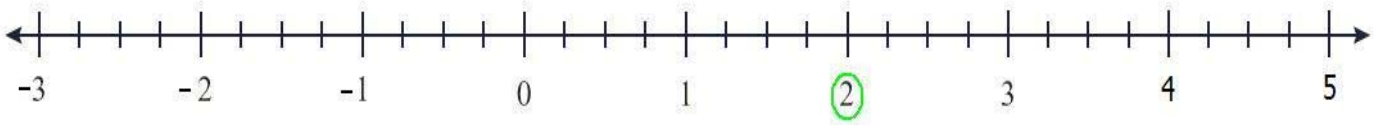
- -3

Submit Answer
Correct!
What is the value of the expression below?

$$2 + (- 5)$$

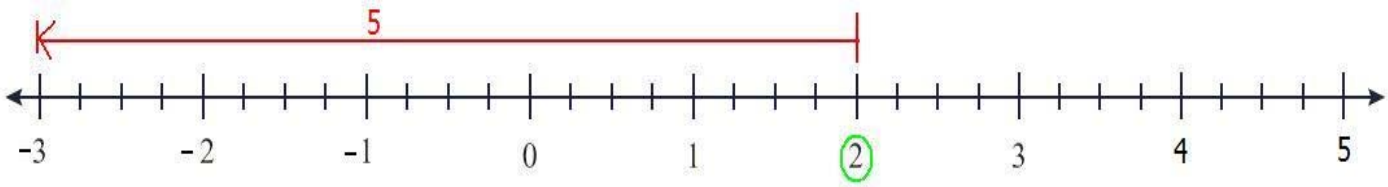
Comment on this question

Let's use a number line. We start from 2.



Comment on this hint

We move to the left 5 spaces and where it stops that's our results.



Comment on this hint

The final answer is - 3. Select - 3.

Comment on this hint
Select one:

- 7
- 3
- - 3
- - 7

Submit Answer
Correct!
You are done with this problem!
Comment on this problem